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Government
Publication

MACKENZIE VALLEY PIPELINE INQUIRY

IN THE MATTER OF AN APPLICATION BY CANADIAN
ARCTIC GAS PIPELINE LIMITED FOR A RIGHT-OF-
WAY THAT MIGHT BE GRANTED ACROSS CROWN LANDS
WITHIN THE YUKON TERRITORY AND THE NORTHWEST
TERRITORIES FOR THE PURPOSE OF THE PROPOSED
MACKENZIE VALLEY PIPELINE

and

IN THE MATTER OF THE SOCIAL, ENVIRONMENTAL AND
ECONOMIC IMPACT REGIONALLY OF THE CONSTRUCTION,
OPERATION AND SUBSEQUENT ABANDONMENT OF THE
ABOVE PROPOSED PIPELINE

(Before the Honourable Mr. Justice Berger, Commissioner)

Yellowknife, N.W.T.

April 23, 1975.

PROCEEDINGS AT INQUIRY

VOLUME XXXV

CANADIAN ARCTIC
GAS STUDY LTD.

APR 30 1975

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MACKENZIE VALLEY RAILLINE INQUIRY

IN THE MATTER OF AN APPLICATION BY CANADIAN PACIFIC GAS SYSTEMS LIMITED FOR A RIGHT-OF-WAY THAT MIGHT BE GRANTED ACROSS CROWN LANDS WITHIN THE KODJON TERRITORY AND THE NORTHWEST TERRITORIES FOR THE PURPOSE OF THE PROPOSED MACKENZIE VALLEY RAILLINE

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APPEARANCES:

Mr. Ian G. Scott, Q.C.	
Mr. Stephen T. Goudge	
Mr. Alick Ryder and	
Mr. Ian Roland	for Mackenzie Valley Pipeline Inquiry;
Mr. Pierre Genest, Q.C.	
Mr. Jack Marshall	
Mr. Darryl Carter and	
Mr. John Steeves	for Canadian Arctic Gas Pipeline Limited;
Mr. Reginald Gibbs, Q.C.	
Mr. Alan Hollingworth	for Foothills Pipelines Ltd.;
Mr. Russell Anthony and	
Prof. Alastair Lucas	for Canadian Arctic Resources Committee;
Mr. Glen W. Bell and	
Mr. Gerry Sutton	for Northwest Territories Indian Brotherhood and Metis Association of the Northwest Territories;
Mr. John U. Bayly	for Inuit Tapirisat of Canada and The Committee for Original Peoples' Entitlement;
MR. Ron Veale and	
Mr. Allen Lueck	for Council for Yukon Indians;
Mr. Carson H. Templeton	for Environmental Protec- tion Board;
Mr. David Reesor	for Northwest Territories Association of Municipali- ties;
Mr. Murray Sigler	for Northwest Territories Chamber of Commerce.

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I N D E X

Page

WITNESSES FOR APPLICANT:

John Richard O'ROURKE

Philip Harvey DAU

Guy Leslie WILLIAMS

- Cross-Examination by Mr. Hollingworth 4543

- Cross-Examination by Mr. Bell 4601

O'Rourke, Dau, Williams
Cr. Exam. by Hollingworth

Yellowknife, N.W.T.

April 23, 1975

(PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

MR. MARSHALL: Mr. Commissioner,
there was a matter dealt with by Mr. O'Rourke in
answer to both Mr. Veale and Mr. Hollingworth,
that requires some clarification. I mentioned to my
friend that I would like to just set the record
straight on that point.

Mr. O'Rourke was questioned as
to the movement of pipe for the interior route in
Canada, and indicated that based on his studies, it
would be more economical to ship the pipe through to
Hay River, and then to Arctic Red River by barge,
and from there by truck to the stockpile sites.

On checking with the logistics
personnel at Northern Engineering, Mr. O'Rourke has
found that the plan as filed in March of 1974, which
was prior to the date of completion of the third
volume of the C.N.-C.P. logistics report which deals
with the interior route, did contemplate some movement
of pipe for the interior route in Canada through
Skagway-Whitehorse.

Thank you, sir.

JOHN RICHARD O'ROURKE,

PHILIP HARVEY DAU

GUY LESLIE WILLIAMS, Resumed:

1 CROSS-EXAMINATION BY MR. HOLLINGWORTH, CONTINUED:

2
3 Q Mr. O'Rourke, yesterday
4 when we concluded, we were discussing the shipment of
5 material over the Dempster Highway to service the
6 interior route in the event that that was constructed.
7 I wonder if you did in your study, any surveys as to
8 the volume of truck traffic that would go over the
9 Dempster Highway in the event the interior route was
10 used?

11 WITNESS O'ROURKE:

12 A I would imagine the only
13 thoughts we have on that would relate to the tonnage
14 of pipe and other materials that would be used in
15 constructing the interior route. We made no studies
16 to determine what other traffic might be moving on
17 the highway at the same time the pipeline traffic
18 was moving.

19 Q Did you make a study though
20 as to how many truck trips would be required to move
21 in the required materials for the pipeline alone?

22 A I don't recall tallying
23 the actual number of truck trips.

24 Q Are you aware of the weight
25 per mile of the 48 inch line proposed by the applicant?

26 A Weight of pipe --

27 Q Yes?

28 A -- per mile?

29 Q Yes, sir. Would you agree
30 with me that it's 660 tons?

1 A 660 tons of pipe?

2 Q Yes, per mile?

3 A I think it's 961 tons per
4 mile, of pipe only.

5 Q Well, perhaps Mr. Dau could
6 be of some assistance there.

7 WITNESS DAU:

8 A It is 960, sir.

9 Q 960 tons?

10 A Yes, sir.

11 I think it's 959.48 to be pre-
12 cise.

13 Q All right, thank you.

14 And how many joints are there
15 in a mile, Mr. Dau?

16 A 40 foot joints, there's
17 1,320 -- 132.

18 Q 132?

19 A Yes, sir.

20 Q So that yesterday in the
21 evidence it was stated that two 40 foot joints would
22 be loaded on a single truck, is that correct?

23 A Yes, sir.

24 Q So that would be 66 truck
25 loads per mile of pipe?

26 A Yes, sir.

27 Q And would you agree with me
28 that the three and a bit spreads that would be ser-
29 viced via the Dempster Highway would cover conservati-
30 vely about 200 miles? From the Alaska-Yukon border

1 to somewhere into that fourthspread?

2 A One moment, please.

3 Could I have the question again,
4 please, sir?

5 Q Would you agree with me
6 that the distance of pipe to be serviced by the
7 Dempster Highway, that's the three and a bit spreads
8 which were discussed yesterday, would run to, conser-
9 vatively, to about 200 miles in length?

10 A Oh, I -- yes, sir.

11 Q Would you therefore agree
12 with me that just for the pipe there would be 13,200
13 truck loads required to be moved down the Dempster
14 Highway?

15 A Yes, sir.

16 Q And the pipe would come
17 nowhere near to forming one-half the total tonnage
18 required to be moved down the Dempster Highway, would
19 it?

20 A Yes, oh yes it would be
21 far more than half, sir.

22 Q It would be far more than
23 half the tonnage?

24 A Oh yes.

25 Q And would it account for
26 far more than half the truck loads?

27 A Yes, sir.

28

29

30

Dau, O'Rourke, Williams
Cross-Exam by Hollingworth

1 Q Would all the trucks be
2 able to carry the tonnage that the pipe trucks are
3 carrying?

4 A No, I'm sure there are
5 some items that, because of their bulk, you couldn't
6 get that tonnage on the truck.

7 Q But nevertheless, the
8 pipe would still form more than half the truckloads.

9 A Yes, I've forgotten the
10 relationship but the pipe is more than half of the
11 total tonnage.

12 Q And in the resource
13 requirement section of the application you cite the
14 need for 350 tractor trucks and a similar number of
15 trailers.

16 A Yes sir.

17 Q Is that figure subject
18 to increase in the event the interior route is used?

19 A Yes, I'm sure it
20 would be.

21 Q Do you know what figure
22 it would go up to?

23 A No, I do not, I do not
24 have that number.

25 Q Would Mr. O'Rourke?

26 WITNESS O'ROURKE: I don't
27 have that number.

28 Q Now, Mr. Dau, my calcula-
29 tions as to tonnage of pipe came from the last panel
30 who said that a 4-foot length of pipe weighed 1,000

Dau, O'Rourke, Williams
Cross-Exam by Hollingworth

1 pounds, is that correct?

2 WITNESS DAU:
A A four-foot length of
3 pipe?

4 Q 48-inch pipe of a diame-
5 ter of .720 inches weighed 1,000 pounds.

6 A No sir, that is not
7 correct.

8 Q That's not correct, and
9 I think it was Mr. Purcell made that statement. Do
10 you know what the weight would be of four feet?

11 A It weighs 364 pounds
12 per foot, I believe.

13 MR. MARSHALL: If Mr. Holling-
14 worth could give us a reference?

15 MR. HOLLINGWORTH: I've got
16 it here, Mr. Marshall. It's Volume 30, page 3807,
17 and 3808. Mr. Purcell is being cross-examined by Mr.
18 Gibbs and at the bottom of 3807 says -- Mr. Gibbs
19 asks:

20 "And would I be in the right range to suggest
21 that if you use those 4-foot lengths, that
22 each one of them would weigh approximately
23 one ton?

24 A I think so, yes -- no, they wouldn't either,
25 they would weigh 1,000 pounds, I believe.

26 Q Half a ton?

27 A Yes."

28 MR. MARSHALL:
I think it's clear from the
29 transcript that they are talking about reinforcing bands.

30 MR. HOLLINGWORTH: I have no

Dau, O'Rourke, Williams
Cross-Exam by Hollingworth

1 doubts at all about that, Mr. Marshall, but I think
2 the evidence also shows the reinforcing bands are
3 four-foot lengths of conventional pipe.

4 MR. MARSHALL: I don't think
5 there is a point of dispute, Mr. Commissioner. Surely
6 this panel can give an exact figure for the weight of
7 the pipe, rather than an estimate that's given in a
8 different context by another panel.

9 MR. HOLLINGWORTH: Mr. Commis-
10 sioner, I'm not trying to get into a dispute, I am just
11 trying to establish how much the pipe weighs.

12 THE COMMISSIONER: Well, what-
13 ever it weighs must be ascertained.

14 WITNESS DAU: 364 pounds per
15 foot, sir.

16 Q 64 pounds per foot?

17 A 364. That's 48-inch
18 O.D. 0.72 wall thickness pipe.

19 MR. HOLLINGWORTH: Q Well,
20 I'm getting back to the last panel again, Mr. Dau.
21 They were discussing the reinforcing bands which would
22 go onto the pipe, and Mr. Purcell stated, I believe,
23 they would go on every 300 feet, is that right?

24 A I don't think the
25 precise length has been determined. That's approxi-
26 mately correct, as I understand it.

27 Q And am I correct in the
28 statement I made to Mr. Marshall that the reinforcing
29 bands are in fact four-foot sections of conventional
30 pipe that you would be using on the line?

Dau, O'Rourke, Williams
Cross-Exam by Hollingworth

1 A I'm not sure, I'm not
2 sure, sir.

3 Q Have these bands been
4 taken into account in the weight figures given in
5 the material?

6 A Not in the filed
7 application, I believe not, no sir.

8 Q So the addition of a
9 1,200 -- approximately 1,200-foot weight every 300
10 feet on the pipe has not been taken into account?

11 A I believe it adds about
12 10 tons per mile.

13 Q But it hasn't been
14 taken into account.

15 A It has not been taken
16 into account, sir.

17 Q Yesterday, Mr. Dau,
18 you were discussing spread No. B, which in the third
19 winter would be on the north coast. I understand from
20 looking at the maps, and the map reference is 3-A-
21 0211-1002, construction plan -- I don't have the ex-
22 hibit number on it -- 13-A, 13-B.

23

24

25

26

27

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29

30

1 Fifty-five, my friend, Mr.

2 Goudge informs me.

3

4 A Could I have the number
5 again please, sir? What's the last series of numbers?

6 Q 1002.

7 A Thank you.

8 Q It is most of the way
9 through the section headed "Proposed Pipeline Route
10 Map".

11 Do you have that before you now,
12 Mr. Dau?

13 A Yes.

14 Q I see that's spread camp B
15 moves during the winter.

16 THE COMMISSIONER: Excuse me,
17 let me just find this, I'm sorry. What was that
18 again, 3-A --

19 MR. MARSHALL: 0211-1002,
20 sir. It's a map that was being referred to by Mr.
21 Veale the other day that shows Komakuk Beach.

22 MR. HOLLINGWORTH: Almost the
23 last, the third last map in the section "Proposed
24 Pipeline Route Maps", Mr. Commissioner.

25 THE COMMISSIONER: Oh, I see.
26 Sorry, we'll just -- all right.

27 MR. HOLLINGWORTH:

28 Q I understand from that,
29 the spread camp moves during that last winter of
30 construction, Mr. Dau? It moves from camp CA04 to

1 CA03?

2 A Which spread, sir?

3 Q B.

4 A That's in Alaska, yes, sir.

5 Q Yes, but it's the same
6 spread group, is it, it's the people constructing it?

7 A Yes, sir.

8 Q It's not a different spread
9 B?

10 A It's the same equipment,
11 I don't know whether it's the same people or not.

12 Q Well how long is a move
13 like that going to take from one spread camp site to
14 the next?

15 A It would be -- let me make
16 sure I understand your question. It is the movement
17 of spread B --

18 Q But the entire camp is
19 moving, is it not?

20 A Yes, the -- are you talking
21 about the movement during the winter?

22 Q Well, as I understand it,
23 there's a movement from one camp, CA04 --

24 A Yes, sir.

25 Q -- westward to CA03 in
26 Alaska?

27 A Yes, sir.

28 Q Now that occurs sometime
29 in March of the last year of construction?

30 A Yes.

1 Q And my question is, how
2 long is it going to take to move that physical camp?

3 A I understand, sir. The
4 camp would not move, as in all probability as one
5 complete unit. In other words, you wouldn't start one
6 morning and move the entire camp. As the crews pro-
7 gressed, you would tend to move crews with some camp
8 facilities. Am I making myself clear? There would
9 be some period of time when you would have, actually
10 have camp at both locations.

11 Q Would there be any hold-up
12 in construction? Would there be any days during
13 which construction did not take place during this move
14 from one site to another?

15 A Not in my view, sir, no,
16 sir.

17 Q So the equipment would, I
18 presume, be moved down the right-of-way, would it?

19 A Yes, sir.

20 Q And this would just be all
21 the equipment of this particular camp, plus the
22 accommodation for the men?

23 A Yes, sir.

24 The movement itself will be on
25 the snow road, the winter road, on the right-of-way.

26 Q Yes.

27 A Yes.

28 Q Well I was wondering if
29 this time was included in the 44 down days which you
30 were discussing yesterday with Mr. Veale, and I presume

1 your answer would be no.

2 A My answer is no.

3 Q Well getting onto that 44
4 days, you said --

5 THE COMMISSIONER: Before you do
6 that, Mr. Hollingworth, we have been talking so far
7 about a move of a spread from one location within
8 Alaska to another location within Alaska, have we?

9 A That is my understanding,
10 sir, yes.

11 MR. HOLLINGWORTH:

12 Q But this is the one we were
13 discussing yesterday, isn't it, Mr. Dau?

14 A No, sir, I don't think we
15 discussed this one at all yesterday.

16 Q Well, would this be untypical
17 of other spreads along the north coast of the Yukon?

18 A This occurs on other
19 spreads, yes, sir.

20 Q So going back to this 44
21 days, you said yesterday that that was a judgment
22 number, is that correct?

23 A Yes, sir.

24 Q And you said that you
25 didn't take labour problems into account on that?
26 Because you expected to have a no strike contract?

27 A Yes, sir.

28 Q And you said you took
29 blizzards into account, but you weren't sure how many
30 days you took into account in those 44 days, is that

1 correct?

2 A That's correct.

3 Q Well, what other consider-
4 ations would go into making up this figure of 44
5 days?

6 MR. MARSHALL: Mr. Commissioner,
7 I'm sorry to interject here. If my friend thinks that
8 we are dealing with the same spread that was being
9 discussed yesterday in connection with the 44 day down
10 time period, I think that's wrong. We are talking
11 about a spread working in Alaska, with these refere-
12 nces that he's given us this morning, and it may be
13 that the down time figures worked into the assumptions
14 don't change, but I think perhaps it ought to be
15 clarified before we go on.

16 THE COMMISSIONER: I thought
17 the 44 days applied generally?

18 WITNESS DAU:

19 A It does in this particular
20 instance, sir, yes.

21 MR. HOLLINGWORTH:

22 Q Is that a general figure
23 for the North Slope?

24 A Yes, it is.

25 THE COMMISSIONER: Well, is it
26 -- excuse me, does it apply north of 60?

27 A In the southern part,
28 excuse me, the southern part of the Northwest Terri-
29 tories, down to the 60th Parallel, it gradually
30 reduces down to 31 days.

1 Q Can I ask you another
2 question? You said yesterday that men working on this
3 pipeline would be 60 percent as productive as men
4 working on a pipeline in southern Alberta. Does
5 that 60 percent figure apply north of 60? Or do you
6 --

7 A No sir, the -- I used a
8 hundred percent, say, for the Prairies, and in the
9 -- generally in the area of the 60th Parallel, just
10 immediately north of it, the number would be approxi-
11 mately 90 percent; and in the area generally near
12 Inuvik would be in the order of 70 percent; and then
13 we've assumed 60 percent along the Arctic coast. It
14 varies, it decreases as you go north.

Dau, O'Rourke, Williams
Cross-Exam by Hollingworth

1 Q So 90 percent

2 at 60 degrees,

3 A Yes sir.

4 Q And decreasing produc-
5 tivity and by the time you reach the Mackenzie Delta
6 it's 70%.

7 A Yes sir.

8 MR. HOLLINGWORTH:
Q So going back to my
9 question, what considerations went into arriving at
10 this figure of 44 days besides the blizzard situation?

11 A I think I responded
12 yesterday that it would include some time during the
13 Christmas season, and it also included the weather
14 factor, and it's a judgment number and I'm sorry, I
15 can't give you more information than that on it.

16 Q Would it include any
17 consideration for down time on machinery? When
18 machinery wasn't operating?

19 A No sir.

20 Q You're expecting your
21 machinery to work 100% of the time all the time.

22 A No sir.

23 Q You're making allowances
24 for some machinery to be off the job some of the
25 time?

26 A Yes sir, we have spare
27 units available in our cost estimates in planning.

28 Q Well, let's take spread
29 B, what spare equipment would you have there?

30 A I don't have a complete

Dau, O'Rourke, Williams
Cross-Exam by Hollingworth

1 list of equipment by spreads with me here. I could
2 perhaps respond by saying that on trenching machines,
3 for instance, if the two was required to maintain the
4 production that was necessary, three are provided, and
5 that type of a reasoning goes all through the estimates.
6 Now that doesn't mean that there is a 50% surplus,
7 if you have 20 of one item, whatever it may be, and
8 you probably have only got two or three spares in that
9 classification. It's based on a judgment as to how
10 much difficulty you may have with equipment repairs
11 and so on.

12 Q Now, what's the average
13 annual precipitation along the North Shore, Mr. Dau?

14 A It's very low. I don't
15 have the number with me. I understand it's on the
16 order of something like nine or ten inches, I believe.

17 Q And do you know what
18 portion of that falls as snow?

19 A Sorry, sir, I would be
20 guessing. I don't have the information here. We
21 have the information, I just don't have it with me,
22 I'm sorry.

23 Q Putting it aside for
24 a moment, perhaps we can carry on. When is the first
25 snowfall usually in that area?

26 A Again, sir, we'd have
27 to dig up the information so I could respond to those
28 questions.

29 Q Does Mr. Williams have
30 it there?

Dau, O'Rourke, Williams
Cross-Exam by Hollingworth

1 A Just a moment, sir.

2 Q Perhaps while Mr.

3 Williams is looking I could go on, Mr. Dau. The
4 Commissioner has discussed the measure of productivity.
5 Was this also taken into account on this 44-days figure?

6 A Is it taken into account --

7 Q In arriving at your
8 44-day figure of down time.

9 A No sir, no.

10 Q How often -- well, let
11 me ask you this: Do you plan to move men in and out
12 with fair frequency to go south?

13 A I think I explained
14 previously that that policy has not been determined.
15 It's a matter of the final labor negotiations. The
16 cost estimates for the system and the planning is
17 based on some movement in and out, yes, but I cannot
18 get specific as to how many times or what durations
19 and so on.

20 Q And is travel in and
21 out by part of the crew then included in your measure
22 of how many miles you can do in a day on the North
23 Slope?

24 A Oh yes, sir.

25 Q Now I notice that spread
26 B is building 65 miles along the coast in the last
27 winter of construction, is that right?

28 A Yes sir.

29 Q And it's previous
30 average in the two preceding winters is 74 miles,

Dau, O'Rourke, Williams
Cross-Exam by Hollingworth

1 just south of Inuvik, is that correct, sir?

2 A Yes.

3 Q Now, again is this
4 decreasing productivity taken into account in arriving
5 at these figures?

6 A Decreasing productivity
7 in that case is more related to the fact that there is
8 195 miles of pipe in Alaska, and you have to do it
9 with a whole number of spreads, or we assumed that, so
10 therefore it comes to 65 miles. We didn't think it
11 appropriate to try and do it with two spreads. The
12 65 miles is not a magic number, it relates to the fact
13 that there is the Alaska-Yukon border at Milepost 195
14 and we assigned that section to three spreads.

15 Q So it's more a case that
16 you had so many miles to do and you assigned a specific
17 number of miles.

18 A In that instance, yes.

19 Q And did you bear in mind
20 this decreasing productivity in deciding whether a
21 given spread was capable of doing a given number of
22 miles?

23 A Yes, we did.

24 Q Now in the discussion of
25 snow roads, I think a figure was given that the compac-
26 ted depth of snow had to be 10 inches before construc-
27 tion of a snow road could begin.

28 WITNESS WILLIAMS: I think
29 what I said, Mr. Hollingworth, was that the times on
30 the pulvimixer were penetrating into the snow that had

Dau, O'Rourke, Williams
Cross-Exam by Hollingworth

1 been put down at Inuvik to a depth of about 10 inches,
2 and yes, to get a good solid road that would be a
3 minimum requirement.

4 Q Well, that's what your
5 canned notes say, isn't it?

6 MR. MARSHALL: Would you
7 let him answer the question?

8 MR. HOLLINGWORTH: Sorry, Mr.
9 Williams.

10 WITNESS WILLIAMS: I've
11 forgotten what I was going to say. This is parti-
12 cularly true in hummocky terrain as was Inuvik, in other
13 areas where it's less hummocky, that figure may be
14 reduced somewhat and is the general practice, for
15 instance, in rig moves that I've seen around Richards
16 Island area, they get by with less than that. It's
17 a pretty solid road but to get one to stand up for
18 heavy, heavy traffic, that's probably a minimum number.
19
20
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1 Q And it's at this level, as
2 I understand your notes, it's at the level of 10
3 inches of compacted snow that the pulverizing machine
4 comes in to do it, stamping, is that correct?

5 A The pulvimixer at Inuvik
6 was operated to a depth of 10 inches into the road
7 surface, yes.

8 Q Well how many inches of
9 actual snowfall is 10 inches of compacted snow in
10 your calculations?

11 A I think the densities that
12 I gave, it would be a ratio of about two -- or two and
13 a bit to one. I think the numbers I gave were about
14 point 25, point 2 or point 25 on the lake. Density in
15 grams per cc where as the compacted snow was about
16 point 5 grams per c.c.

17 Q So you would require 20
18 inches or more of natural snowfall to have the 10
19 inches of compacted snow? On that two to one ratio?

20 A Yes, sir.

21 Q Well given those figures
22 and the light precipitation along the north coast,
23 it's going to be an absolute necessity that you go out
24 and harvest snow, isn't it?

25 A On the north coast I think
26 we also mentioned we would rely fairly heavily on
27 snow fencing to accumulate snow in -- along the right-
28 of-way or very close to the right-of-way.

29 Q Well, perhaps I should have
30 phrased my question more accurately. You're not

1 relying on natural snowfall in making your snow road?

2 A Not the snow road, per se.
3 The one used for hauling heavy materials, that is
4 correct.

5 Q It will be absolutely neces-
6 sary to get it by means of snow fences or harvesting
7 from lakes or manufacturing?

8 A Oh, there could be instances
9 of drifting snow on or near the right-of-way that
10 -- naturally drifting snow that would assist in that
11 aspect, but probably some manufacturing or harvesting
12 would be required and /the harvesting includes harvesting
13 by snow fencing to get a solid road suitable for
14 wheeled traffic.

15 Q Are you relying on a cert-
16 ain amount of drifting on the right-of-way all the
17 way along the north slope?

18 A Not relying on it, no, sir.
19 I'm certain it will occur and will be of assistance.

20 Q Have you made studies as
21 to what time of the year the volumes of snow you
22 require would have accumulated on the average?

23 A It varies considerably from
24 year to year.

25 Q What does it vary from?

26 WITNESS DAU:

27 A I have some information
28 for Komakuk Beach, which indicates that it snows every
29 month of the year, with minor quantities in July and
30 August, September it's about 3.9 inches of snow;

1 October is 8.0; November, 2.0; December, 0.3, and
2 that's average 24 inches per year of snowfall. Unfor-
3 tunately, I don't know how many years this record has
4 been kept. I suspect it's on the order of eight or
5 ten years.

6 Q So if you relied on natural
7 snowfall, you would have to use the whole year's pre-
8 cipitation on the average to make your snow road?

9 A If you didn't accumulate
10 snow by snow fencing or by harvesting or by manufactur-
11 ing.

12 Q Well turning to these
13 manufacturing devices for a moment, what rate of pro-
14 duction are they capable of, the ones which you
15 studied?

16 WITNESS WILLIAMS:

17 A would you like to pick a
18 particular one, or all of them?

19 Q I don't know any particular
20 ones. You said you -- I believe in your present-
21 ation you said that there were larger models available
22 now. Let's take one of those.

23 A What I said, Mr. Holling-
24 worth, is that with the gerry rigged outfit that
25 we had at Inuvik, we produced 12,500 cubic feet in
26 31 hours, and one properly rigged machine utilizing
27 six nozzles, we estimate could produce 20 times that
28 quantity.

29 Now, that's a fair bit of cal-
30 culation to work out how much road that's going to

1 produce of --

2 Q Well, no need, I think you
3 said that 18,000 cubic yards per mile was required
4 in your evidence?

5 A That's what we used at
6 Inuvik, that was the approximate -- that was the
7 calculated average quantity of snow used at the Inuvik
8 test.

9 Q And do you know what
10 quantity of water is required to make that 12,500
11 cubic feet of snow?

12 A How much water was used
13 to make the 12,500 cubic feet of snow at Inuvik was
14 --

15 Q Yes?

16 A 31,200 gallons.

17 Q Where would you plan to
18 get the water for snow making in the event that this
19 technique was used along the North Slope?

20 A As we said yesterday, that
21 this technique of manufacturing snow with the snow gun
22 would mainly be used in the early part of the winter
23 construction season, to allow an early start of con-
24 struction. It's not planned for the full length of
25 the right-of-way.

26 And in the early part of the
27 season, the winter season, if you're still speaking
28 of the Yukon north coast for instance----

29 Q Yes, I am.

30 A -- where water is

1 generally in short supply, the rivers and streams are
2 still running to some -- quite a few of the streams
3 are still running to some extent at that time of year.

4 In addition, there are some
5 shallow lakes and ponds that do freeze to the bottom
6 through the winter, but they don't do it that quickly
7 and in the early part of the season, there would be
8 water available in the shallower lakes. Beyond that,
9 there are a few deep lakes that water could be taken
10 from, if required later in the season.

11 Q And would you plan to make
12 the snow at the source of the water, or would you truck
13 the water to the place where you wanted the snow?

14 A Well initially the equip-
15 ment would have to be placed at the source of water to
16 get started. That may be done in the previous winter,
17 the winter prior to its need.

18 Then, after some road is con-
19 structed from the water source to the right-of-way,
20 probably the water would be hauled to the machine by
21 truck, but with that artist's conception thing that
22 we put up on the board the other day, that is designed
23 to return the whole -- I'm sorry, the conceptual
24 design of that machine permits the whole unit to go
25 back to the source and pick up a load of water and
26 go back to where the snow is required to be manufact-
27 ured. It's flexible in that respect.

28 But snow roads would have to
29 be provided between the source and the end use.

30 Q Well, that was my next

1 question. You're looking for snow in the first inst-
2 ance, but surely you have to have a snow road to get
3 from the right-of-way to your source of water?

4 A Yes, and that's why I say
5 the equipment would have to be in the proper place,
6 to the nearest source of water so that you could get
7 started manufacturing snow for a snow road to get
8 where you wanted to use it along the right-of-way.

9 Q Have you made studies to
10 see if these proper sources are available at all
11 points where you might want to start construction of
12 a snow road?

13 A This question has come
14 up in the -- one of the questions to the Assessment
15 Group, and in the response there we gave a couple of
16 typical spreads where water would be obtained. I can
17 dig out that reference, if you want it.

18 Q That's not necessary.

19 Mr. Dau, yesterday in answer to
20 Mr. Veale you spoke of 12 hours day. Would the men
21 be working a 7 day week as well?

22 WITNESS DAU:

23 A The cost estimates in
24 planning reflects that, yes, sir.

25 Q You also stated that that
26 would be a 12 hour total, the 12 hours would start
27 running from the time that you left the camp with the
28 men to go wherever the work was proceeding at the
29 time?

30 A That's the assumption, sir.

Dau, O'Rourke, Williams
Cross-Exam by Hollingworth

1 Q And would end by the
2 time the men got back?

3 A Yes sir.

4 Q So you might have quite
5 a bit of travelling time within those 12 hours.

6 A Yes sir.

7 Q How much travelling time
8 could you possibly have?

9 A It's based, the cost
10 estimates in planning are based on an average of two
11 hours per day. Obviously there are circumstances when
12 it would be greater than that, and there are also
13 circumstances when it would be less than that.

14 Q And are there any breaks
15 that the men have during the day?

16 A Sorry?

17 Q Are there any breaks the
18 men would have during the day? For lunch, I assume.

19 A Yes.

20 Q How long are these
21 breaks?

22 A They are relatively
23 short, as a guess I'd say half an hour.

24 Q Half an hour total
25 during the day?

26 A Oh, it would be more
27 than that, I'm sure. I thought you were talking about
28 the lunch break.

29 Q No, I'm talking about
30 all the breaks.

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1 A Oh, probably a little
2 bit more than half an hour. I'm not sure, sir.

3 Q Now as I calculate
4 it, one mile a day of pipeline, which is what you
5 want to achieve, is 66 joint welds.

6 A That would be correct.

7 Q Presuming that you've
8 got 80-foot joints in place.

9 A Yes sir.

10 Q Are you planning to have
11 80-foot joints along the North Slope?

12 A I've explained that we
13 would prefer to have 80-foot joints obviously, and
14 we recognize that there will be some 60-foot joints
15 and we also know that in some areas we'll be required
16 to use 40-foot joints. We have not defined all of
17 these areas. I cannot tell you precisely how many
18 joints of 80-foot, 60-foot, and 40-foot pipe each
19 spread will utilize.

20 Q How many welding
21 units, that is to say units of men, would you have at
22 a typical spread? How many joints could be welded
23 simultaneously?

24 A We're not planning on
25 having two separate and distinct welding crews, it's
26 a continuous operation. I can give you -- I have a
27 crew size, I don't have the equipment list.

28 Q Well, would I be correct
29 in assuming that at the first joint you would have
30 the welder, who is doing the first pass, and then down

Dau, O'Rourke, Williams
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1 the line you would have a welder or welders, doing
2 the second pass and so forth down the line? Is that
3 how the crew would work?

4 A Not precisely that
5 way, but that's the general sequence, yes.

6 Q Well, I just did some
7 rough calculations and came up with a tremendous
8 number of -- well, the 66 joint welds being done,
9 and that's at least one every ten minutes, assuming a
10 full 12-hour day.

11 A That's probably correct,
12 sir, yes.

13 Q Now, how long is the
14 first pass going to take?

15 A I don't have that
16 information here, sir. I can certainly get the basis
17 of our estimates and provide that for you. I don't
18 have it with me.

19 Q And do you know how
20 many men would be doing the first pass?

21 A There would be three, I
22 think, for the 48-inch pipe. Sorry, I don't have
23 that detailed information.

24 Q Well, do you know how
25 many passes are going to be required with this thickness
26 of pipe?

27 A I'm not sure. I could
28 get that for you.

29 Q Could you, please?

30 A Yes.

Dau, O'Rourke, Williams
Cross-Exam by Hollingworth

1 Q Has a study been made
2 of mechanical welding on the portion of the pipeline
3 going along the North Slope?

4 A You mean automatic welding?

5 Q Yes.

6 A Not in our planning and
7 cost estimating, no sir. There is research and
8 study going on currently as to the suitability of the
9 different automatic welding techniques.

10 Q Are they being tested
11 in climates such as that which exist along the North
12 Slope?

13 A Yes, I understand the
14 research is being done in cold rooms to simulate the
15 temperatures. I also understand that there have been
16 some rather extensive winter tests on the Aleyeska
17 project. I might add that with respect to the C.R.C.
18 automatic welding equipment that we saw in that
19 film the other day, Mr. Holmberg has provided me with
20 some information on 48-inch by 3/4-inch wall pipe,
21 that indicates that they can complete six to eight
22 welds per hour. This is an operation that is currently
23 under way. I understand most of the 48-inch heavy
24 wall pipe/^{that}is being stalled is being installed on the
25 North Sea.

26 THE COMMISSIONER: Excuse me,
27 in the North Sea?

28 A Yes, I'm sorry. Some of
29 it is in the North Sea; most of it is in Europe.

30 MR. HOLLINGWORTH: Holland,

Dau, O'Rourke, Williams
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1 I believe, isn't it?

2 A And it ranges from
3 30-inch to 48-inch. There's a total of some 1,500 miles
4 that C.R.C. equipment has installed to date.

5 Q Just --

6 A He also indicates that
7 they tested four miles of 48-inch pipe.

8 Q Well, your notes which
9 you presented in chief say that you are still planning
10 for manual welding. Is that correct?

11 A Yes, the planning and
12 the cost estimating is based on manual welding. We
13 are confident there will be automatic techniques
14 that will be satisfactory and approved by the time
15 we go into construction.

16 Q Well, the plans you show
17 in the peak construction year give a figure of 1,000
18 welders. Is that right?

19 A That's approximately
20 correct, yes.

21 Q Where are you going to
22 get these welders, Mr. Dau? Are they available in
23 Canada now?

24 A The total of 1,000?

25 Q Yes.

26 A I would suspect that
27 they're not available today.

28 Q Do you know how many
29 would be available now?

30 A Just one moment.

1 Could I look at the backup document, sir?

2 Q I'm sorry?

3 A I have some information
4 on that in some of the documents we have here. I have
5 the reference, sir. It comes from some of the documents
6 that we are relying on. This one was prepared by Acres,
7 it's called a construction resource availability
8 study, and with specific reference to page 327 there
9 is a paragraph that refers to welders. I'll read it:

10 "Welders appear in the table to be in short
11 supply in Western Canada, but two major
12 points must be borne in mind --"

13 THE COMMISSIONER: Sorry, Mr.
14 Dau, I'm having trouble hearing you. Do you want to
15 just start that again, if you don't mind?

16 A Yes, I'm sorry, sir.

17 Q You're reading from what?
18 Is this a report or something?

19 A This is a document that
20 is in the appendix B that we are relying on, and it's
21 a report prepared by Acres Consulting Services, it's
22 entitled:

23 "Construction Resource Availability Study."
24 I'm reading from page 3-27:

25 "Welders appear in the table,"
26 and they're referring to a table, chart previous,
27 "to be in short supply in Western Canada,
28 but two major points must be borne in mind
29 when consideration is given to this problem.
30 (1) the agreed training program for upgrading

Dau, Williams, O'Rourke
Cross-Exam by Hollingworth

1 to pipeline welding is only of eight weeks'
2 duration. Hence a very large pool exists from
3 which potential pipeline welders can be drawn.
4 As an example, there are 1,350 ticketed pressure
5 welders in Alberta and 350 in British Columbia
6 who are not pipeline welders."

7 And continuing on:

8 "In Ontario, ticketed pressure welders are
9 qualified at rates in excess of 10,000 per
10 annum. Some 48,000 welders have qualified
11 over the past five years."

12 Q That's pressure welders.

13 A These are pressure
14 welders that could be upgraded, some portion, sir.

15 "If the union estimate is accepted, then
16 approximately 4% of these welders would be
17 available for pipeline work, approximately
18 2,000 pipeline welders could be made available
19 by a series of 8-week courses. The various
20 institutions across Canada estimate that 500
21 pipeline welders can be trained in each year.
22 Although these men would not be immediately
23 available for big inch work, they could fill
24 the gaps left in the small inch work force
25 by upgrading."

26 It goes on at considerable length. Does that respond
27 to the question?
28
29
30

1 MR. HOLLINGWORTH:

2 Q Yes, well I understand that
3 welding, particularly the first pass on a pipeline of
4 such high pressure as this calls for a considerable
5 degree of skill, is that a fair statement?

6 A I'm sure that's correct,
7 sir,

8 Q And I think in essence what
9 Acres is saying that they can take welders who don't
10 deal with pipeline at all and put them onto the small
11 inch pipe and put the small inch men on to the big
12 inch pipe. Is that what they're saying, in essence?

13 A No, they're saying that
14 some of them, that that would happen to some of them.
15 I don't think they are saying that all of the current
16 welders would have to work on this particular project,
17 I don't think they are inferring that sir, no sir.

18 THE COMMISSIONER: Excuse me,
19 Mr. Dau. The pressure welders who are qualified as
20 pressure welders, which I take it is a general cate-
21 gory --

22 A Yes, sir.

23 Q -- can be upgraded and
24 qualified for the specialized category of pipeline
25 welding, but those pressure welders in B.C., Alberta
26 and Ontario, are, many of them, working at other jobs,
27 and they might not be willing to give them up to come
28 to the north. Was that in the mind -- the collective
29 mind of Arctic Gas and Northern Engineering when the
30 whole question of artificial -- not artificial, what

1 do you call them, automatic welding was considered?

2 A It's certainly a consider-
3 ation sir, yes.

4 MR. HOLLINGWORTH:

5 Q Well that's an interesting
6 point, Mr. Dau, because the report of Acres seems to
7 be somewhat at odds with Mr. Holmberg's remarks on the
8 last panel, saying that he anticipated problems in
9 finding a sufficient number of qualified welders.
10 Were you aware of his comments?

11 A I have not seen his comm-
12 ents.

13 Q I realize you can't tell me
14 the number of passes required on this pipe, but I
15 wonder if you can tell me this. The film we saw
16 yesterday showed three passes on 30 inch pipe in Texas.
17 Is that correct?

18 A I believe that's correct,
19 yes.

20 Q Do you know if there would
21 be more than three passes required on this particular
22 pipe?

23 A I have no idea, sir, because
24 we have not selected the technique.

25 The only information I have is
26 from Mr. Holmberg, who indicates that automatic equip-
27 ment in 48 inch O.D. by three-quarter inch pipe is
28 able to complete six to eight welds per hour.

29 Q Is that faster than manual
30 labour could do the job?

1 A Yes, I believe so.

2 Q Now, how common is automat-
3 ic machinery welding on pipeline construction in
4 Canada at this moment?

5 A It has been used. It's
6 -- I wouldn't say it's very common, no.

7 Q It's really not very common
8 at all, is it?

9 A I'm not sure of the mileage
10 that has been automatically welded by years.

11 Q If I suggest to you that
12 the technique is still being perfected and a lot of
13 people are very reluctant to use it, would you agree
14 with that statement?

15 A That's probably true,
16 sir.

17 Q And that Arctic Gas is
18 really relying on the development of this machinery
19 to occur within the few years remaining to it in the
20 hopes that it can use it on its line?

21 A No sir, we are not relying
22 on it. We are hopeful and confident that it will be
23 developed. For instance, Aleyeska is using an automatic
24 process, although I understand it's not completely
25 automatic, but they have -- each of the contractors
26 there, I believe, are using the automatic process.

27 Q What's the pressure on the
28 Aleyeska line, do you know?

29 A I believe it's maximum
30 pressure of around 12,000 -- sorry, 1,200 pounds per

1 square inch.

2 Q Which is less than your
3 proposal?

4 A Yes, sir.

5 Q And where is this automatic
6 welding machinery manufactured?

7 A I'm sorry, sir, I don't
8 know. Obviously one of them is manufactured in Texas.

9 Q Now, in the event that you
10 went to the 42 inch alternative on the Prudhoe Bay
11 lateral and the Richards Island lateral, would your
12 welding requirements be reduced?

13 A Yes, of course.

14 Q And they would be reduced
15 because of smaller diameter pipe?

16 A A combination of smaller
17 diameter pipe and lesser wall thickness.

18 Q And lesser thickness.
19 by
20 Do you know/what percentage
21 they would be reduced?

22 A No sir, I don't, it's not
23 a very large number.

24 Q Now, if we could go to
25 coating and wrapping for a moment. The evidence you
26 gave in chief indicates that pre-coating or yard
27 coating, as I believe it's called in the trade, is
28 being actively considered by Arctic Gas or by Northern
29 Engineering?

30 A It's my understanding that
it's one of the options available to us, sir, yes.

1 Q Is it an actively considered
2 option?

3 A Yes, I believe it's -- no
4 decision has been made as to exactly what will be used.
5 It's a matter of final design.

6 Q Do you know what thickness
7 of coating you would have applied at the factory?

8 A No sir, I do not. I would
9 have thought that that type of question would have
10 been asked of the design panel who handled that parti-
11 cular matter.

12 There are several mil coatings
13 that could be used, and no decision has been made on
14 what will be used.

15 Q Well, would you agree
16 with me that yard coating generally prescribes about
17 60 or 70 mils?

18 A I suspect it would depend
19 on the type, sir, but I can't comment on that.

20 Q And would you agree with
21 me that yard coating could add substantially to the
22 weight of the pipe?

23 A Not substantially, no, sir.

24 Q To some degree, then?

25 A To some minor degree, yes.

26 Q Has this been taken into
27 account in the figures for tonnage being hauled down
28 the Mackenzie that have been demonstrated to us?

29 A Not as a specific item.
30 I'm sorry, I had better --one moment, please. Yes,

1 it has, sir. And in the tonnages that are used, we
2 used the worst situation which would be tape coating,
3 which provides the maximum amount of tonnage required.

4 Q Well, let me ask you then,
5 what mil tape you would be using in the event you went
6 with line coating?

7 A I'm sorry, what mil?

8 Q What thickness in mils
9 would your tape be in the event it was applied on the
10 line?

11 A I'm sorry, I don't have
12 that information here, I'll attempt to get it for
13 you.

14 Q Well it's not very --
15 don't worry about it, Mr. Dau.

16 Where are you planning to obtain
17 the tape that you might use in your final construct-
18 ion?

19 A That would be a matter of
20 final design and specifications and obviously a
21 matter of quotations and purchasing procedures at the
22 time just prior to construction.

23 Q Have you established how
24 many -- first let me ask you this: Would you agree
25 with me that pipeline tape is generally sold in what
26 are called squares, which is a hundred square feet?

27 A Yes, sir.

28 Q And have you established
29 how many squares you would require for your pipeline?

30 A I haven't. I'm sure it's

1 been done, sir. I haven't done it.

2 Q Would you agree with me
3 that you need slightly more than 10 squares for each
4 80 foot joint of pipe? It would be slightly in excess
5 of a thousand square feet of tape?

6 And that this would therefore
7 work out to in excess of 660 per mile?

8 A Yes, that would be correct.

9 Q Are you aware of present
10 Canadian production of pipeline tape?

11 A No, sir.

12 Q So you wouldn't dispute
13 with me the fact that there are two major manufacturers
14 in Canada who are together capable of manufacturing
15 no more than three million squares of tape?

16 A I have no idea, sir.

17 Q Now if we can just go back
18 to the interior route for a moment, Mr. Dau. In
19 the event that 40 foot joints were used exclusively
20 on the interior route, I presume that the number of
21 welds would be doubled?

22 A Yes.

23 Q Now, would all these welds
24 be performed after the stringing operation? Along
25 the line?

26 A Would you go back to the
27 start of your question? You said assuming --

28 Q Assuming you had all 40
29 foot joints on the interior route --

30 A Yes.

1 Q -- where would the welding
2 occur? After stringing?

3 A Some would occur after
4 stringing, some would occur in a double jointing
5 operation, and I believe the application indicates
6 that it would be -- just one moment.

7 I can't find the reference right
8 now, but I'm pretty sure the plan envisages some
9 double jointing operations at stockpile points on
10 the Dempster Highway in the north. We are trying to
11 find the exact reference.

12 Q Well let's just for the
13 moment assume that this was done. When would this
14 occur, in summer or winter?

15 A I had better see if I can
16 find the reference. I'm not sure, I suspect it would
17 be done in the summer, sir.

18 I will try and check that for
19 you.

20 Q And would the welders who
21 -- would it be manual welding or automatic welding
22 in this case?

23 A Probably automatic welding.

24 Q And would union rules
25 require a welder of some degree of competence to
26 operate these welding machines, or is it just a
27 labourer who can do this?

28 A I'm not sure what the
29 labour negotiations are going to be for this parti-
30 cular project, sir.

1 Q What would your specificat-
2 ions be for an operator of such a machine?

3 A He would certainly have to
4 be qualified as I understand that in a lot of the
5 automatic welding processes, the -- some of the workmen
6 need to be skilled technicians, rather than trained
7 welders. Now, what that mix is going to be, I'm sorry,
8 I can't help you.

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Dau, O'Rourke, Williams
Cross-Exam by Hollingworth

1 Q Dealing with your evidence
2 in chief on page 7 and page 8, resource requirements,
3 you state there at the bottom of 7, beginning at 8:

4 "Of the equipment listed in Section 13-A-5.2
5 of the application material, a significant
6 proportion is now owned by or available to
7 the Canadian Pipeline Construction Industry."

8 Now, I wonder if you could break that down for me?
9 First of all, tell me what a significant proportion is,

10 A I'm sure it would vary
11 item by item, sir. I can't give you -- it's an overall
12 general statement. I have no information that lists
13 exactly how many side booms are owned by contractors
14 today and so forth.

15 Q Well then you go on and
16 say:

17 "...is now owned by or available to the
18 Canadian Pipeline Construction Industry."
19 What do you mean by "available to", it can be rented
20 from other countries?

21 MR. MARSHALL: Mr. Hollingworth,
22 I think the sentence that you're reading from goes
23 on. You've read half a sentence. I think in fairness
24 to the witness you should read the whole sentence,
25 which starts after the point that you stopped at to say:

26 "Which are present operates the equivalent
27 of seven construction equipment spreads
28 capable of installing large diameter pipe."

29 MR. HOLLINGWORTH: Yes, Mr.
30 Marshall, but the first part of the sentence says that

Dau, O'Rourke, Williams
Cross-Exam by Hollingworth

1 a proportion is owned or available to, and I would
2 like a breakdown.

3 A I'm sorry, I don't have
4 the breakdown, sir, but in response to your question
5 on "available to", yes, there is equipment that is
6 available for rent.

7 THE COMMISSIONER: Well let
8 me put it this way. That sentence is not altogether
9 clear. You say that at the present time the Canadian
10 pipeline construction industry operates the equivalent
11 of seven construction equipment spreads capable of
12 installing large diameter pipe. Now, is it your
13 assumption that all of those seven spreads -- and that's
14 the Canadian pipeline construction industry -- is it
15 your assumption that all of those seven spreads would
16 be available to Arctic Gas? Or only a limited number
17 of those spreads, and if so, how many?

18 A As I recall, sir, the
19 -- I can't respond directly to your question. My
20 recollection is that we made the assumption that these
21 contractors could supplement their equipment, they
22 would purchase more or Arctic Gas would purchase more
23 equipment, and that I think the best I can say is
24 most of those spreads would be devoted to Arctic Gas.
25 I will try and dig up the reference for you, sir.

26 Q Well, I know it's
27 difficult to be specific, since we're dealing with a
28 number of intangibles. Let us assume that the whole
29 of those seven spreads which the Canadian pipeline
30 construction industry is now capable of operating,

Dau, O'Rourke, Williams
Cross-Exam by Hollingworth

1 were made available to you. Would that be sufficient
2 during the second and third winters, which are the
3 two peak construction periods in the Arctic Gas --

4 A No sir, that would not
5 be sufficient. The plan requires nine spreads, avail-
6 able in the peak period.

7 Q So that if the Canadian
8 Pipeline Construction Industry shut down, so as to
9 devote itself entirely to the construction of the
10 Arctic Gas Pipeline, there still would not be suffi-
11 cient manpower and equipment to build the line. Are
12 you then contemplating an expansion of the Canadian
13 pipeline construction industry? That is the organ-
14 izations which presently comprise the Canadian
15 pipeline construction industry?

16 A There has to be an
17 expansion in that industry, sir, yes. Now whether
18 that results in more contractors or results in larger
19 contractors, I don't know.

20 MR. HOLLINGWORTH: Q Well,
21 in arriving at that figure of seven spreads available
22 to the Canadian pipeline construction industry, do
23 I understand you then to say that no account has been
24 taken of any other work they might be doing?

25 THE COMMISSIONER: I don't
26 think Mr. Dau said that. He's just giving us a way
27 of understanding the present capacity of the Canadian
28 pipeline construction industry.

29 MR. HOLLINGWORTH: All right
30 then, let me rephrase that.

Dau, O'Rourke, Williams
Cross-Exam by Hollingworth

1 Q In the event, say that
2 Trans-Canada wanted to loop some of their line during
3 your peak years, would there be any crews available
4 to them as your present planning goes?

5 A Yes, I'm sure there
6 would be.

7 Q Would they be new crews
8 in your mind, or would they be crews that had been
9 pulled off the Arctic Gas line from winter construc-
10 tion?

11 A I have no idea, sir.
12 All I can say is that it's recognized that the pipe-
13 line construction industry has to expand to build this
14 pipeline, the applicant's pipeline, in the time frame
15 envisaged. I'm quite sure that if there is other work
16 to go on, there are more than seven pipeline
17 contractors, I'm sure you're aware. Some of them can
18 upgrade to larger diameter pipe. Some of the contrac-
19 tors can acquire more equipment, acquire more spreads.
20 I can't respond other than that. There has to be an
21 expansion of the system, of the industry.

22 THE COMMISSIONER: And if their
23 seven spreads were occupied, engaged, committed to
24 other pipeline construction, other than the Arctic Gas
25 project, there would have to be -- the capacity of
26 the industry would be -- would have to more than double
27 to undertake the project.

28 A That's correct, sir.

29 MR. HOLLINGWORTH: Q Is
30 Arctic Gas anticipating that Trans-Canada is going

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1 to be looping its line to accommodate some of the
2 gas that's going to be supplied to the Alberta system?

3 MR. MARSHALL: This witness
4 is a consultant to Arctic Gas and perhaps he may have
5 some personal knowledge about it.

6 MR. HOLLINGWORTH: I'm sorry
7 I didn't hear you.

8 MR. MARSHALL: Mr. Dau is, as
9 you know, a consultant to Arctic Gas, and if you wish
10 to ask him about his own information, I think that's
11 fine. You will have ample opportunity to ask Arctic
12 Gas management.

13 MR. HOLLINGWORTH: Well all
14 right, let me ask it on the basis of Mr. Dau's infor-
15 mation.

16 A I can only assume that
17 if they're transporting gas to -- from this pipeline
18 into Eastern Canada in significant volumes it would
19 probably result in some sort of a looping program.
20 I have no details of it at all.

21 Q So it follows that if
22 Trans-Canada was unable to loop its line, then the
23 gas that was available in the west couldn't be trans-
24 ported east.

25 MR. MARSHALL: Mr. Commissioner,
26 are we not --

27 THE COMMISSIONER: You don't
28 have to pursue that, Mr. Marshall. That's all
29 hypothetical, isn't it? If the Trans-Canada line has
30 to be looped to accommodate gas from the Arctic, then

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1 if it isn't looped, you can't accommodate the gas from
2 the Arctic. That's what you're saying and I think we
3 all, everybody in this room over ten years of age can
4 understand that. I don't think we have to ask Mr.
5 Dau to comment on that.

6 MR. HOLLINGWORTH: Q Mr.
7 O'Rourke, I think you have indicated in your evidence
8 in chief that approximately 500,000 tons is hauled
9 annually on the Mackenzie River barge system.

10 WITNESS O'ROURKE: Yes sir.

11 Q Do you know what per-
12 centage of that is in the form of bulk commodities,
13 such as fuel for Yellowknife, or fuel for other
14 communities?

15 A I believe it's about
16 50%.

17 Q And what percentage of
18 Arctic Gas' hauling requirements are fuel?

19 THE COMMISSIONER: Excuse me.
20 What was that last question just before?

21 MR. HOLLINGWORTH: I wanted
22 to know what percentage fuel would constitute of
23 Arctic Gas's hauling requirements. I think I worded
24 it backwards.

25 THE COMMISSIONER: Yes, but
26 what was your question before that?

27 MR. HOLLINGWORTH: I asked
28 him what percentage of bulk shipments -- what percent-
29 age of the 500,000 tons hauled annually on the Mac-
30 kenzie River barge system constit-- was made up of

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1 bulk goods such as fuel. His answer was 50%.

2 THE COMMISSIONER: All right,
3 and while Mr. O'Rourke is looking for the answer to
4 the second question, tell me what the second question
5 was.

6 MR. HOLLINGWORTH: The second
7 question was: What would bulk items such as fuel
8 constitute in terms of percentage of Canadian Arctic
9 Gas' total hauling requirements?

10 A In very quick numbers, the
11 Arctic Gas fuel volumes to be delivered to barge
12 stops downriver from Fort Simpson are approximately
13 a third of the current level, if we accept it, it's
14 in the order of 250,000 tons; currently the Arctic
15 Gas number is approximately a third of that.

1 Q Now, I believe you indi-
2 cated yesterday that something in the order of 468,000
3 tons would be required to be hauled to the Prudhoe Bay
4 lateral for the last season of construction?

5 A That amount of tonnage is
6 to be hauled over two years.

7 Q Would it be divided
8 approximately in half each year?

9 A No, sir. According to the
10 application, the split is about 123,000 tons in the
11 summer -- equivalent to a year early. In the summer
12 immediately preceding construction it's 345,000 and
13 in the summer preceding that, we're approximately a
14 year and a half in advance of construction, there's
15 123,000 tons of all items.

16 Q Now, yesterday you told
17 the Commissioner that the original plan had envisaged
18 some off-shore pipe in your hauling calculations. Do
19 you know what percentage that was?

20 A Are we talking the coastal
21 route now?

22 Q Yes, the coastal route?

23 A I'm not sure I can give
24 you an immediate answer, because I'm not -- if you
25 are looking for the split of tonnage going to the
26 Canadian portion of the Prudhoe Bay segment or lateral,
27 I think I can give you that, based on the numbers we
28 used when we did our study.

29 If you are talking of the total
30 pipe in the total system, it's a different number.

1 Q Well, let me just go on
2 Mr. O'Rourke. Time is getting on.

3 In the event that all Japanese
4 pipe was used on the construction, just for argument's
5 sake, would it not be considerably cheaper to bring
6 that around and into Alaska and then have it shipped
7 overland, than by going up through Hay River and down
8 the Mackenzie barge system?

9 A You said into Alaska, I
10 don't think you meant that, maybe you did?

11 Q Yes, I did mean into
12 Alaska.

13 THE COMMISSIONER: Do you mean
14 Skagway?

15 MR. HOLLINGWORTH: No, I'm
16 sorry, sir, I meant around the north--

17 THE COMMISSIONER: Through
18 the Bering Strait?

19 MR. HOLLINGWORTH: Through the
20 Bering Strait.

21 A And where would you ter-
22minate the move?

23 Q Let's say at Prudhoe Bay.

24 A And deliver it by what
25 means from there?

26 Q Well, all right, let's
27 terminate at the stockpile sites.

28 A Can I go back to your
29 original question now?

30 Q Okay.

1 A would you repeat it,
2 please?

3 Q Would it not be cheaper --
4 for argument's sake, suppose that the Prudhoe Bay
5 lateral was entirely constructed of Japanese pipe,
6 would it not be substantially cheaper to haul that
7 through the Bering Strait around to the north coast
8 and drop it off, perhaps into a lighter or something of
9 that arrangement, to get you across to your stockpile
10 site, than bringing it up through Hay River and down
11 the Mackenzie Valley system?

12 A I don't think I want to
13 answer that without doing a little bit of number
14 work. There is the capacity -- we have to look at
15 the capacity of the coastal marine operators to deter-
16 mine if they have the equipment on hand to deliver
17 all of that pipe for all points along the line.

18 If they don't have it, then
19 Arctic Gas could be approached with having to bear
20 the full cost of any additional equipment, and I can't
21 give you a conclusive answer right now.

22 WITNESS DAU:

23 A Does the question relate
24 to the delivered cost of the pipe or just to the
25 transportation portion?

26 Q Delivered cost.

27 WITNESS O'ROURKE:

28 A And you are including
29 the mill cost of the pipe?

30 Q Oh I'm sorry, no I should

1 say transportation costs.

2 WITNESS DAU:

3 A Just for transportation
4 costs?

5 Q So your answer is still
6 the same?

7 MR. MARSHALL: I think his
8 answer was he couldn't give you an answer. It would
9 take quite a bit of calculation. I assume you don't
10 want that performed?

11 MR. HOLLINGWORTH:

12 Q I would like to get that
13 answer.

14 MR. MARSHALL: Mr. Commissioner,
15 it seems to me that it's a hypothetical on a hypothet-
16 ical, and it's really asking too much of the witness
17 to go into a maze of calculations based on certain
18 assumptions that my learned friend has made, that may
19 have no validity.

20 THE COMMISSIONER: Is the
21 question this: What is the cost of delivering a unit
22 of pipe from Japan to Prudhoe Bay or Mackenzie
23 Valley via water, through the Bering Strait, as opposed
24 to delivering that same length of pipe to the Macken-
25 zie Delta or one of those sites on the Prudhoe Bay
26 supply leg, via water to Vancouver and then via rail
27 to Hay River and then via barge down the Mackenzie
28 River.

29 Now, without going into the
30 cost of the pipe as a component of that, if you're

1 able to say by examining the matter briefly at coffee,
2 I think we would like to hear it, but I certainly
3 don't -- I'm not asking you to go off and spend your
4 weekend on this or anything like that.

5 WITNESS O'ROURKE:

6 A If I could explain my
7 hesitation, Mr. Commissioner, the problem is if you
8 ask -- and the problem area lies mainly to do with
9 the coastal marine operator, and if you say to him,
10 "I want one ton of pipe delivered in each of two
11 successive shipping seasons to each of ten points
12 along the coast, the Arctic Coast", he will likely
13 come back and say "Fine, I have enough equipment to do
14 that and my price is such and such".

15 But if you say to him, "I have
16 a hundred thousand tons of pipe I want to have
17 delivered to a variety of points along the coast,
18 and I want to look at delivery over one year or two
19 years or three years, can you do that", then the
20 marine operator will come back and in some instances
21 say, "I can handle your requirements if you'll let
22 me do it this way: Divide the shipments up over
23 two or three years and I'll hit several points, but
24 if you want it all at once or if you want more points
25 covered than what I'm saying, I have to go out and
26 buy equipment that is not readily available to me on
27 the market", and this changes the price quite signi-
28 ficantly.

29 We have gone through this rout-
30 ine a little bit with the marine people, and this is

1 why I say, you can get an answer, but it takes a
2 little bit of time and the question has to be spelled
3 out fairly specifically.

4 THE COMMISSIONER: Well, let
5 me tell you what I'm interested in, Mr. O'Rourke.

6 The Order-in-Council establishing
7 this Inquiry says that it is to consider the impact on
8 the economy of the Yukon and the Northwest Territories
9 of the construction of the proposed gas pipeline.

10 Now, because the proposal is to
11 build a pipeline up the Mackenzie Valley, everyone has
12 rightly proceeded on the assumption that the impact
13 on the economy of the Northwest Territories will be
14 very, very significant. But the mandate of this
15 Inquiry also means that we must examine the impact on
16 the Yukon.

17 Now, the construction and
18 logistical plan that Arctic Gas has filed, proceeds
19 on the assumption that the steel will be manufactured,
20 the pipe steel will be manufactured within Canada,
21 shipped to Hay River and down the Mackenzie River.
22 If that assumption is unfounded, if that assumption
23 is not sound, and if it turns out that you
24 buy your pipe off-shore, say in Japan, then you might
25 very well have to consider supplying it certainly to
26 the Prudhoe Bay link, the Prudhoe Bay supply line
27 via the Bering Strait or via Skagway, or via
28 Vancouver and then by rail to Hay River.

29 Now, this inquiry is going to
30 go to Whitehorse, and before we do, I would like to

1 see these alternatives discussed so that the people
2 there have some idea of what it might mean to the
3 Yukon if the supply of pipe was to be -- was to go
4 through Skagway, Whitehorse and over the Dempster,
5 and I know you can't provide us with that information
6 over coffee, but we are going to adjourn until May
7 12th, and Mr. Dau and Mr. Williams and you will
8 be back at that time, and I would appreciate it if
9 you would examine those alternatives.

10 I know that you cannot do it
11 down to the last detail, but I would like you to take
12 a look at that whole picture, because I am concerned
13 that the impact of this pipeline, if it is built, upon
14 the Yukon, should be understood when the Inquiry goes
15 to Whitehorse, and if we may, we should like to look
16 to you to give us some additional help on that whole
17 question.

18 I don't think I'm interested in
19 quite the same thing that Mr. Hollingworth is, but
20 I'm making it clear what I'm interested in, because
21 I think that could turn out to be of importance.

22 I hope you agree with me, Mr.
23 Marshall. I'm --

24 MR. MARSHALL: Yes, sir, I see
25 the points that you are interested in, and I'll work
26 with Mr. O'Rourke over the break to see if we can
27 provide you with some additional information when we
28 reconvene in May.

29 THE CHAIRMAN: Fine. Well I
30 think it is time for coffee.

1 MR. HOLLINGWORTH: Well I have
2 two more questions, sir.

3 THE COMMISSIONER: All right,
4 two more questions.

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Cross-Exam by Hollingworth

1 MR. HOLLINGWORTH: Q Dealing
2 with the tugs and barges, Mr. O'Rourke, that would
3 have to be ordered, have you discussed this with a
4 number of operators, or is any single one operator
5 going to provide all this?

6 WITNESS O'ROURKE: We made
7 our recommendations to Arctic Gas. I'm not aware of
8 what they have done with regard to meeting with the
9 various operators.

10 Q And in your evidence in
11 chief you spoke of 400 new flatcars, which had been
12 ordered by C.N. for hauling long pipe, 80-foot pipe.

13 A Maybe you want to go on
14 to your question first.

15 Q Who is financing that?

16 A Canadian National.
17 At least Canadian National placed the order, but the
18 fine detail for the mechanics of financing I am not
19 aware of. The reason I hedge on it is that in recent
20 years we have, for a variety of equipment purchases,
21 we have been looking to different forms of financing
22 for equipment. I can't get into detail, I'm not
23 expert on it.

24 Q Well, I think I was
25 dealing with a different aspect.

26 A Pardon me?

27 MR. HOLLINGWORTH:

28 I think I was dealing
29 with a different aspect in my question, so that's
30 fine, thanks very much. That's all, Mr. Commissioner.

THE COMMISSIONER: Thank you,

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Cross-Exam by Bell

1 Mr. Hollingworth. Well, we'll adjourn for a few minutes.

2 (PROCEEDINGS ADJOURNED FOR FEW MINUTES)

3 (PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

4
5 CROSS-EXAMINATION BY MR. BELL:

6 Q Mr. Dau -- I'm sorry,
7 Mr. Williams, I believe you stated that the ditching
8 machine is going to be the prime method of excavating
9 the ditch.

10 WITNESS WILLIAMS: Yes sir.

11 Q But that blasting with
12 some other type of excavation would be available as
13 a backup method.

14 A Yes sir.

15 Q That would be in case
16 the ditcher should fail or in case it couldn't operate
17 in certain types of soil.

18 A Certainly the latter,
19 Mr. Bell. If the ditcher fails, I think we've explained
20 if we have breakdowns we will have spare capacity.

21 Q You mentioned that
22 blasting had many disadvantages as compared to the
23 ditcher. Could you just expand on that a little bit,
24 please?

25 A Yes. The main diffi-
26 culty is that in blasting as we explained, the proce-
27 dure that we plan to use is to loosen the material
28 rather than throw it out of the ditch. We need that
29 material for backfill. It tends to produce material
30 in large pieces that is not too satisfactory for

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Cross-Exam by Bell

1 backfill material. So some further processing would
2 be required of the excavated material to make it
3 suitable backfill. That's one aspect.

4 The other aspect of course
5 is that drilling and blasting is much more expensive
6 than a wheel ditching type of excavation.

7 Q Is it slower, too?

8 A That's a function of
9 how many people you put on, Mr. Bell. But generally
10 speaking, I would say yes, it's slower.

11 Q Would you say that the
12 applicant really has little alternative but to develop
13 a ditching machine which is going to do the job
14 properly?

15 A Well, there's always the
16 alternative of blasting. I don't think it's fair to
17 say that a ditching machine has to be developed. We
18 feel that the large new generation machines that
19 are available now will excavate a good percentage of
20 the line as planned. We would like a larger more
21 efficient machine to increase that percentage that
22 can be done with a wheel ditcher.

23 Q Can you tell me how
24 many ditchers would be in use at any one time on a
25 typical spread north of the 60th Parallel?

26 A Our plan is to have
27 two operating. If we're looking at a mile a day,
28 in some instances one machine would be able to
29 accomplish that. We are planning on two to take
30 care of the more difficult areas, but there would

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Cross-Exam by Bell

1 -- we also plan to have a third as a standby in case
2 of breakdown of one of the machines.

3 Q So could you give me
4 a rough estimate of the total number of ditching
5 machines that you would need north of the 60th
6 Parallel?

7 A North of the 60th, I
8 think it would be about 15.

9 Q 15. How many hours per
10 day would a ditcher be in use?

11 A Oh, it can be varied.
12 They are one item that can be double-shifted quite
13 easily. It would depend on the material being
14 excavated, how difficult it was. If it can be done
15 -- if we can get the mile a day or a little better
16 in ten hours, that's about all it would be operated.
17 If it takes longer, it's quite easily and common
18 practice to double-shift those machines and work about
19 20 hours a day.

20 Q So any one machine
21 could work between 10 or 20 hours a day.

22 A Yes, or even less than
23 ten.

24 Q Well, suppose you had
25 two machines operating on a single spread, and they
26 were operating at 12 hours a day. That would mean that
27 each machine in order to make a mile a day, each
28 machine would have to be digging at the rate of 10
29 feet per minute or so. Can you tell me what rate it
30 would have to be?

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Cross-Exam by Bell

1 WITNESS DAU: I'm not sure
2 I've got the problem correct. Each machine is going to
3 dig a half a mile in 12 hours?
4

5 Q Yes.

6 A That's about 3.7 feet
7 per minute. That would be the rate if it worked 12
8 hours.
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1 Q In the testing of the
2 ditchers which you described, what was the longest
3 period that any of the test machines was in continuous
4 use?

5 WITNESS WILLIAMS:

6 A I'm sure the longest use
7 in hours was the test at Sans Sault, which extended
8 over seven or eight days, I think. The machine there
9 was working fairly continuously.

10 Q And can you recall the
11 rate in feet per minute which that machine got?

12 A At Sans Sault in the silty
13 test site that we had, it averaged four and a half
14 to five feet per minute. I think, Mr. Bell, I would
15 have to check that for sure, but there's a curve in
16 that report, and of course it starts out at a high
17 -- it started out at a higher rate when the teeth
18 were sharp, I think it was up in the seven or eight
19 feet per minute, and declined down to almost nothing
20 when the teeth were worn out, but the average was in
21 -- my recollection is around four and a half or five
22 feet per minute.

23 Q But nevertheless, you
24 decided as a result of that test that you needed a
25 bigger machine and better teeth?

26 A Yes, sir. In the sandier
27 condition at Sans Sault, it was less than that. It
28 was probably in the two or three foot per minute
29 range and the teeth wore out more rapidly.

30 Q You mentioned two types of

1 soil here, and one is a clay, did you say?

2 A Well, one was mainly silt,
3 with a little clay; the other was a silty sand, and
4 it was the sand that gave us the trouble.

5 Q Which of these two types
6 of soil is more likely to be encountered along the
7 route?

8 A I don't know if this table
9 that we have summarizes that. Yes, I guess it does.
10 The GLB is a fairly substantial terrain unit crossed.
11 This table, I think, shows a total of 205 miles of that
12 material. That is mainly silt, Mr. Bell, in the GLB.

13 The other large terrain unit is
14 the RKM that's -- that tends toward the till material
15 that is mainly clay, with a bit of -- or cobbles in
16 it, a bit of gravel, probably a bit of sand. Those
17 are the largest terrain units.

18 MR. MARSHALL: Just to clarify
19 the record, Mr. Williams, is that Exhibit 99 that
20 you're making reference to?

21 A I think so -- is that --
22 MR. MARSHALL: Prime Route,
Fort Simpson

23 amendment, Summary of Terrain Units in Miles and
24 Estimated Blasting Requirements?

25 A Yes, sir.

26 MR. BELL:

27 Q Did any of the subsequent
28 tests encounter this kind of -- these kinds of soils?

29 A The tests after Sans Sault,
30 we were endeavouring to find sites that were till because

1 as this table indicates, there is a high percentage
2 of RKM which is till on the route, and that's
3 what we were looking for at Fort Simpson, when I
4 mentioned we were unsuccessful in finding a successful
5 site -- or a suitable site at Fort Simpson, we were
6 looking for a till condition in permafrost. This was
7 what we had at Churchill and/Gillam. They were till
8 conditions.

9 Edmonton, I think I mentioned,
10 was a gravel pit; Seebe is a shale pit and Fort
11 McPherson is a gravel pit, but it was the RKM till
12 unit that we were looking for.

13 Q What was the length of the
14 ditch at Sans Sault, do you recall?

15 A Oh, in the silty condition,
16 the total ditch excavated was about a mile, I think,
17 Mr. Bell; in the sandy silt condition it was, I think
18 in the order of 500 feet, four to five hundred feet.

19 Q And over how many days
20 was ditching done? Do you remember that?

21 A That Sans Sault test was
22 done in conjunction with Mackenzie Valley. They were
23 interested in the program, and they brought quite a
24 few contractors in off and on to witness it, and it
25 spread over I'm sure the best part of the week.

26 Q In all of the tests that
27 have been conducted, what was the maximum ditching
28 rate that was discovered, that was achieved?

29 A I think the maximum rate
30 was achieved at Gillam in the till condition there

1 that was a fairly warm permafrost, and the -- both
2 machines tested -- I'm sorry, the Banister and the
3 Henuset machines tested achieved rates up to 20 feet
4 per minute.

5 Q I believe, though, you said
6 that that test site was too easy --

7 A Yes, sir.

8 Q -- for a proper test?

9 A Yes, sir.

10 Q Can you tell me what was
11 the lowest temperature at which these machines were
12 operated during these tests? More or less?

13 A Oh, at Sans Sault I think
14 we had temperatures down to 20 below and they were
15 at least that cold at Churchill. The other areas that
16 we tested were not that cold.

17 Q Well, apart from the Sans
18 Sault tests where you decided that you needed a larger
19 machine and better teeth, you haven't really tested
20 any ditchers in conditions which approximate operating
21 conditions that will be found during construction?

22 A Not for sustained periods,
23 no. We will get permafrost conditions on the route
24 similar to Gillam. It's just that it was at the
25 easier end of the scale of permafrost conditions, but
26 no, that has been part of our problem, we haven't
27 been able to get a suitable site where we could get
28 sustained testing operations.

29 Q Well, are you saying then
30 it would be desirable to have tests of the ditcher

O'Rourke, Dau, Williams
Cr. Exam. by Bell

1 under conditions which prevail north of 60?

2 A Yes, sir.

3 And tentatively, those are
4 planned for next winter season.

5 Q The winter of '75-76?

6 A '75-76, yes, sir.

7 THE COMMISSIONER: The tests,
8 you mean?

9 A Further ditching tests, and
10 the area that we have tentatively selected is near
11 Norman Wells.

12 MR. BELL:

13 Q This would be to test the
14 so-called third generation of machine that you're
15 developing, as well as new teeth?

16 A If it is available for that
17 period, yes. If not, we might move the -- one or both
18 of the present large machines up there for additional
19 test work.

20 Q Well,^{is}/it your intention,
21 or is it the applicant's intention, to use this new
22 machine as opposed to existing machines on the con-
23 struction?

24 A It could be a combination
25 of both, Mr. Bell, depending on the location that they
26 are being used. The results of the further tests that
27 we do prior to construction. That's pretty hard to
28 answer right now, but it could be one or the other or
29 a combination of the two.
30

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Cross-Exam by Bell

1 Q Do you really have enough
2 time? Suppose you say you're going to start construc-
3 tion in the winter of '78-'79, do you really have
4 enough time to test these machines properly in condi-
5 tions which approximate those that would be found along
6 the prime route?

7 A Yes sir, I think so.

8 Q Well, you'd have to,
9 it seems to me, sir, you'd have to test the machine,
10 you'd need at least two winters to test the machine.
11 You'd need one winter to find out what was wrong with
12 it, then you'd have to develop improvements in the
13 off-season and then you'd need another winter to test
14 the improvements to make sure they'd work so you could
15 be more or less positive or assured that the machine
16 is going to perform properly.

17 A That would probably be
18 ideal, Mr. Bell, yes. But the work that we have done
19 with the two large machines now, we are satisfied that
20 that type of machine will do a high percentage of the
21 route as presently planned.

22 Q Well, what I think I'm
23 suggesting to you is that although there are three
24 winters between now and the beginning of construction,
25 as it's presently planned, that really only one of
26 those or at least only two of those would be available,
27 only one testing season would be available to you to
28 test these machines properly, because if you want to
29 start in the winter of '78-'79, you're going to have
30 to get these machines up to the construction site

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Cross-Exam by Bell

1 during the barging season, and that in order to make
2 sure that you do that you're going to have to order
3 any new machines and any new parts well in advance
4 to meet that schedule. I'm suggesting to you that
5 the winter prior to the first winter of construction,
6 that would be '77-'78, is not really going to be avail-
7 able to you to test these machines, and therefore you
8 will have to test them in the winter of '76-'77.

9 WITNESS DAU: We should explain,
10 Mr. Bell, the trenching machine we're talking about is
11 not a brand new development. The trenching machine
12 consists of standard components that are in use in other
13 equipment. The engines for the machines are engines
14 that are currently in use in other construction
15 equipment. The under-carriage for the machine, the
16 tracks and so on, are currently in use on other
17 construction equipment. The drive mechanisms, the
18 hydraulics and so on, are -- we're not starting fresh
19 on those items, they have been tested, they have been
20 proved, the testing we require is the test to prove
21 that the structural integrity of the machine, the
22 integrity of the wheel and the teeth are satisfactory,
23 and that we have sufficient power to excavate at a
24 rate that we are required to excavate at.

25 THE COMMISSIONER: Well, if
26 you -- the film Mr. -- the slides Mr. Williams showed
27 us showed that you are having trouble with the teeth
28 on these machines, so you have to develop teeth that are
29 sufficiently strong and sufficiently durable and then
30 you have to have a wheel that, together with the teeth,

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 can sustain the amount of power that's needed to
2 cut through the permafrost, and it's that aspect of
3 the ditcher you're working on, I take it.

4 A Yes, we're very pleased
5 with the results we've had in the development of
6 ditcher teeth, for instance. As you probably noticed
7 in that presentation that they were subject to some
8 terrible conditions, particularly at Seebe, and in
9 Calgary, and yet we had no failures with teeth. They
10 wore as we would expect. A new prototype ditcher
11 is ultimately going into our production model, is
12 going to be larger. We recognize that we require more
13 horsepower to the wheel, but it's not a case that
14 we're re-designing the wheel, if I may use that
15 expression. It's a slightly larger, heavier wheel that
16 is required and we've got a lot of confidence in that
17 technology. That's not -- you know, we're not way out
18 in research or anything like that.

19 Q Well, I think we under-
20 stand that, but at the moment if you were to have to
21 dig a trench for a pipeline in Southern Alberta, you
22 could say, "We have a ditcher to do the job."

23 A Yes sir.

24 Q But you're still not
25 in a position to say about the digging of a trench for
26 a pipeline through a zone of continuous permafrost,
27 "We have a ditcher to do the job."

28 A We have a ditcher that
29 can -- and I'm not sure of the number, sir -- but we
30 have a ditcher that currently can excavate a trench

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 for let us say 70% of the route; and what we want to
2 do is raise that percentage to approaching 90. That's
3 what it's all about, is to move it further down the
4 scale so that we can excavate more material. Now in
5 doing that, we will ultimately wind up with less
6 trenching machines. In other words, to excavate the
7 70% now we could probably not do it with just three
8 trenchers on a spread. We might need more than that.
9 But when we develop the new one we're confident that
10 we can be back to three trenchers on a spread.

11 Q Well, right at the
12 moment if you had to go ahead tomorrow morning and
13 start excavating a trench from the 60th Parallel to
14 Richards Island and then Prudhoe Bay, you're saying
15 that you could only use the ditcher for 70% of the
16 length of the line, and for the other 30% you'd have
17 to blast.

18 A Yes sir; and that's not
19 a precise number, we haven't --

20 Q No.

21 A -- determined it.

22 Q And you hope that by
23 the time you reach that first -- the second winter,
24 which is when you begin excavating, you hope and you
25 expect that by that time you will have built a ditcher
26 that will enable you to excavate the trench over 90%
27 of the length of the route north of 60, and you will
28 only have to blast 10% of the route.

29 A That's what we're trying
30 to do, sir. I might add that the -- there is a program

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 that is under development that indicates that we would
2 not have difficulty in obtaining the required number
3 of trenching machines for the start of construction,
4 pipeline installation, in the winter of '78-'79 with
5 the start of the development almost immediately. This
6 allows for the development of a prototype, the testing
7 of a prototype, modifications to a prototype, and
8 then construction of production models.

9 MR. BELL: Mr. O'Rourke,
10 was I correct in inferring from your testimony that
11 the existence of the Mackenzie Highway would not make
12 much difference to the cost of constructing a pipeline?

13 WITNESS O'ROURKE: I think
14 my testimony referred to the cost of moving materials.

15 Q The cost of materials.

16 A I can't speak to the
17 question of what the highway would do to the total
18 cost of building the pipeline.

19 Q Can anybody?

20 WITNESS DAU: I'm not aware
21 of any studies that were done in trying to determine
22 that number, if that's your question. Are you asking
23 --

24 Q I'm saying, don't you
25 know whether or not the existence of the Mackenzie
26 Highway would affect in a fairly substantial way the
27 cost of constructing the pipeline?

28 A I would not agree with
29 "in a fairly substantial way," no sir.

30 THE COMMISSIONER: Sorry, what

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 did you say? I must be having trouble, I didn't catch
2 that.

3 A Sorry, sir. I understood
4 the question to be that --

5 Q Oh, I understood the
6 question. What was your answer?

7 A I can't agree with the
8 words "fairly substantial".

9 Q So that the highway
10 doesn't alter the picture substantially, is that it?

11 A Not in my view, not as
12 far as costs are concerned, sir. Certainly it's a
13 matter of degree. I don't think it's a very substantial
14 number.

15 MR. BELL: Well, I'd like to
16 read you a brief passage here. The speaker is comment-
17 ing on the routing of the Mackenzie Highway and he
18 says, I quote:

19 M R. MARSHALL: Can we have the
20 identity of the --

21 THE COMMISSIONER: You might
22 tell us what this is and who the speaker is.

23 MR. BELL: Can I read the
24 two sentences that I have?

25 THE COMMISSIONER: No, I think,
26 Mr. Bell, you have to tell us what it is you're
27 reading.

28 MR. BELL: O.K. This is a
29 speech by Prime Minister Trudeau in April of 1972.
30 He says:

Dau, O'Rourke, Williams
Cross-exam by Bell

1 "The route will be carefully selected so that
2 it will be of use should oil or gas pipelines
3 be built along the Mackenzie Valley. It will
4 be built ahead of any pipelines and will there-
5 fore offer considerable cost-savings to them
6 during the construction period."

7 Are you now telling us that the Prime Minister was
8 wrong?

9 THE COMMISSIONER: Well, I
10 don't think it's quite fair to put it that way.

11 (LAUGHTER)

12 If you want to go ahead, Mr. Dau, ^{but} you're from Alberta.
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1 MR. BELL: Well perhaps I could
2 refer you to another document. This is entitled,
3 "Transportation Corridor Study Summary", and it's the
4 summary of a study that was commissioned by the
5 Alberta Gas Trunk Line Company Limited and Canadian
6 National Railway, and at page 2 of the summary, it
7 -- there's a list of some of the findings. There's
8 seven findings and the sixth one is this one, and I'll
9 read it to you. It says:

10 "The total capital cost
11 of a gas pipeline through the corridor
12 study area, could be reduced if an all-
13 weather road were to be built through the
14 corridor prior to the commencement of
15 pipeline construction. The capital cost
16 of a gas line could be reduced by an
17 amount equal to approximately 60 percent
18 of the capital cost of the road".

19 And over on page 8 of that sum-
20 mary, it says:

21 "The potential savings
22 attributable to an all-weather road could
23 be about \$18,440,000.00 for the gas pipe-
24 line according to the study report, or
25 about 60 percent of the capital cost of
26 the road".

27 I take it you disagree with
28 these conclusions?

29 A Yes, sir.

30 Q Are you familiar with this

1 study at all?

2 A No, I'm not.

3 Q So you can't tell us why
4 you would disagree?

5 A Well, if I understood your
6 last quotation, 60 percent of the cost of the all-
7 weather road is equivalent to \$18,000,000.00?

8 Q Well it was when this study
9 was commissioned.

10 A I can't believe that, sir.

11 Q You're saying that that
12 number is not 60 percent, or --

13 A I don't know, I would have
14 to look at it in detail, sir. My first view is that
15 I can't agree with that, no.

16 Q Well are you saying to me
17 that \$18,000,000.00 is not a substantial -- it would
18 not have a substantial effect on the cost of construct-
19 ion?

20 A Eighteen million dollars
21 may be an appropriate number for the saving in the
22 costs of the -- as far as the pipeline is concerned,
23 but in my view, that's a pretty small percentage of
24 the total cost of constructing an all-weather road.

25 And I am sorry, we have
26 not done such calculations to have a number.

27 Q The tonnage figures that
28 you gave us the other day, are they revised to reflect
29 the effects of the east of Fort Simpson route change?

30 A Yes, I believe that's

1 correct, sir.

2 Q Can you just describe what
3 those effects would be, briefly?

4 WITNESS WILLIAMS:

5 A The east Fort Simpson rout-
6 ing is one point four miles longer in total, I think
7 it's a little bit more than that in the Northwest
8 Territories. I don't have that number, but because
9 the line shifts to the east where it crosses the
10 border, I think that has the effect of adding a little
11 bit more than that in the Northwest Territories, but
12 it's a fairly small number. It may be in the order
13 of two to three miles longer in the Territories.

14 In addition, I think we've
15 stated that about an additional five miles of concrete
16 weighting is required on the east Fort Simpson rout-
17 ing. That would be additional tonnage that would have
18 to be moved somewhere, but probably not included in
19 those figures, because they would be manufactured as
20 close as possible to the end use.

21 Q Well, would it have any
22 effect on the amount of material that has to be
23 shipped by barge, as opposed to by truck?

24 A I'm sure it would be very
25 small percentage, Mr. Bell.

26 Q Could Mr. O'Rourke help
27 us on that?

28 WITNESS O'ROURKE:

29 A My first reaction is to
30 think that it shifts some of the tonnage off the

1 highway onto trucks, but I haven't done an up-date on
2 my old reports, and I'm speaking off the top of my
3 head. If I had a drawing, I might be able to get at
4 it, but --

5 Q You're saying that more
6 tonnage would have to be shipped by barge than by
7 truck?

8 WITNESS DAU:

9 A I'm sure that's correct.
10 It's a pretty small percentage, but I'm sure that's
11 correct.

12 WITNESS O'ROURKE:

13 A Yes.

14 MR. BELL:

15 Q Would you have to accommo-
16 date this increase by the construction of more barges
17 and tugs?

18 A I can't answer that con-
19 cretely, because one of the features is that while the
20 tonnage may be up, it's also a relatively short haul,
21 out of Hay River that is, and it's also in an area
22 where the shipping season is rather lengthy, so --
23 these are the plus factors, but I can't tell you
24 what the net effect is on the total barging require-
25 ments.

26 WITNESS WILLIAMS:

27 A I know it does shorten
28 the truck haul from the Hay River-Enterprise area
29 to the line, the ton mile truck haul south of the
30 crossing of the Mackenzie east of Fort Simpson is less

1 with the revised routing than with the routing as
2 filed.

3 Q This is the Fort Simpson
4 amendment, Exhibit number 66 and at Tab 13A,
5 Construction Plan, page 3, item 3 entitled "Logistics",
6 there's a brief passage here -- perhaps it would help
7 if I just read it. It says:

8 "Relocation of applicant's
9 proposed main line will have only a minor
10 effect on logistics plan. It will cause a
11 slight increase, about four percent, in
12 the use of the Mackenzie River barging
13 system, and a reduction in road hauling
14 from the Hay River-Enterprise stockpile".

15 Now, Mr. O'Rourke, does that
16 help you to be able to tell me whether or not addit-
17 ional barges or tugs will be required?

18 WITNESS O'ROURKE:

19 A Not easily, sir. I think
20 I would have to agree that the fact that tonnage is
21 up over the original alignment and that some of this
22 tonnage is going to go by barge, would logically say
23 that there is going to be an increase in barging
24 requirements, in ton miles, if you will, on the river.
25 But I haven't done any arithmetic to know what the
26 total ton mileage is that is created by this line
27 revision, and what impact that has on the amount of
28 barging equipment that is required.

29 Q And I suppose if the
30 new type of ditching machine were used, it would

1 increase the tonnage as well, would it not, if it
2 were used in any substantial numbers?

3 A Are you talking about the
4 weight of the machine itself?

5 Q Yes, the amount of material
6 that has to be carried would be increased?

7 WITNESS DAU:

8 A You're comparing the
9 construction equipment required with the new generation
10 of ditching machine in relation to what's currently
11 available now?

12 Q Right. Well, in relation
13 to the figures that were used to calculate the tonnage
14 that appears in the application.

15 WITNESS O'ROURKE:

16 A Well, I guess there are two
17 questions. Mr. Dau may have to answer one side of
18 it, is that when you put this new generation ditcher
19 on the spreads, what does it do to any other items of
20 equipment that you have on the original list?

21 Q Well, that's a question
22 I would like to have answered, too.

23 A The other aspect is that,
24 and again I can't give you a final answer on this,
25 because in some of our calculations where we worked
26 on moving construction equipment, we did what the
27 people call cubing out on the barge before you got to
28 the weight --

29 Q I'm sorry, I didn't catch
30 that term?

1 A We cubed out on the barge,
2 in other words, you used up all your deck capacity
3 before you got your tonnage limitation, so that if the
4 dimensions of this new ditcher, whatever it may be
5 in comparison to the older ditcher, haven't changed
6 too appreciably, even though the tonnage is up, you
7 still carry the ditcher on the same barge.

8 But we don't have these fine
9 numbers to work with yet.

10 WITNESS DAU:

11 A My guess, sir, is there
12 would be no difference.

13 Q Would there be any differ-
14 ence in the amount of fuel that would be required to
15 operate these machines?

16 A Again, my guess would be
17 it would be essentially the same. I have no numbers
18 -- it's a very insignificant percentage related to
19 the total fuel required.

20 Q Mr. O'Rourke, how many
21 barges and tugs now operate on the Mackenzie River?

22 WITNESS O'ROURKE:

23 A I don't think we have an
24 up-to-date number on it, because I think there was
25 equipment put on the river last summer, that I don't
26 have in my records.

27 Q Can you give me an
28 approximation?

29 A When we did our study in
30 1973, there were 41 tugs, and in the order of 195

O'Rourke, Dau, Williams
Cr. Exam. by Bell

1 barges of all sizes working on the river.

2 As I said, I'm quite certain
3 that some new equipment was put on the river last
4 summer, but I don't know the number.

5 Q So it would be more than
6 195 barges that they would have now?

7 It might be 200 barges?

8 A I think, yes.

9 Q I believe you say in the
10 -- the applicant says in the application -- in its
11 filings, that the present barging system has a capacity
12 of some 500,000 tons per season.

13 A Yes.

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Dau, O'Rourke, Williams
Cross-exam by Bell

1 Q The figures that we were
2 shown the other day indicate that the increase in
3 tonnage attributable to the pipeline in the second
4 year would be 620,000 tons, approximately, and in the
5 second year, 708,000 tons, and in the third year --
6 fourth year, pardon me, 475,000 tons.

7 THE COMMISSIONER: Well, this
8 was a slide that Mr. Williams put on the board. The
9 figures are undisputed.

10 A Except Mr. Dau was just
11 pointing out to me the tonnage that you read off
12 included some road tons.

13 MR. BELL: Yes, about
14 200 and some thousand tons of road ton.

15 A In one year.

16 Q Right.

17 I believe you said that
18 the applicant would probably need an additional 48
19 barges and 8 tugs.

20 A Yes sir.

21 THE COMMISSIONER: Well,
22 the tonnage capacity of the Mackenzie River
23 barge system will have to be doubled essentially for
24 the three years that the project continues. That's
25 putting it roughly about where the figures get us,
26 isn't it?

27 A Yes sir.

28 MR. BELL: Q Well, wouldn't
29 you have to have 200 more barges?

30 A No sir.

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 A great many of the barges on the river now are very
2 small barges, 2 to 300, 400 tonners, and their style
3 of movement, as I understand it, is not the same as
4 what it would be if you were mainlining large quantities
5 of material on large barges with large tugs.

6 Q If you rely primarily on
7 the barging system to ship your material to the con-
8 struction sites, or at least to the stockpiles, it
9 has to be shipped in advance no later than the freezeup
10 of the -- or the freezeup preceding the construction
11 season.

12 A Yes sir.

13 Q You would agree with that?

14 A Yes.

15 Q And the barging of
16 equipment, since there is so much of it, would
17 probably have to get under way at the very beginning
18 of the barging season in order to make sure that it
19 was all up there in time to be in place for construc-
20 tion. You'd have to use the entire barging season to
21 accommodate your needs.

22 A Yes sir.

23 Q Approximately how long
24 is the barging season?

25 A The barging season that
26 we used in our work applies to movements out of
27 Hay River. I believe it commences about the first week
28 in June and runs on into September or October.

29 Q Would five months be
30 a fair figure as an approximation?

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 A 4 1/2, four months, I
2 think, is a little safer.

3 Q O.K.

4 A That's at the Hay River
5 end.

6 Q Well, let's suppose for
7 a minute that the Mackenzie Highway is completed all
8 the way to Inuvik, prior to the commencement of
9 construction -- this of course is a totally hypotheti-
10 cal situation -- now the existence of that highway
11 would free you from the constraints of the barging
12 season, wouldn't it?

13 A Not completely. It would
14 be -- the use of the highway would be interrupted dur-
15 ing two periods of the year, during freezeup and break-
16 up.

17 Q I understand that they
18 are approximately two weeks each. Would that be safe
19 to say?

20 A What happens, depending
21 on what it is you're trying to do with the highway,
22 you can have interruptions at the Liard River crossing,
23 the Mackenzie River crossing at Fort Simpson; I think
24 Mr. Dau can correct me if I'm wrong, I think the
25 government intends to put in a ferry at the Great Bear
26 River.

27 Q Well, what I'm trying
28 to get at is how much time would be used up by
29 freezeup and breakup? I mean how much shipping time
30 would you have to --

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 A On the highway?

2 Q Yeah.

3 A My guess is that if
4 you're talking of moving fully loaded tractor-trailer
5 units say in the order of 72-76,000 pounds G.V.W.,
6 then your road-hauling season on movements having
7 to pass through Fort Simpson would be in the order of
8 nine and a bit months. It's longer if you have
9 small cars and pickups.

10 Q So the road-hauling
11 season then, I take it, is at least twice as long as
12 the barge-hauling season, or the barge-shipping season?

13 A Roughly.

14 Q So if you used the high-
15 way you could shave off three or four months of the
16 lead time that would be required to get in place for
17 the construction season?

18 A The particular months
19 you're talking about are which ones?

20 Q The months during which
21 trucks can operate that barges can't.

22 A Well, again -- O.K.,
23 let's go onto the next point, destination.

24 Q Well, let's try the
25 bottom of the valley then, Inuvik?

26 A O.K., at Inuvik your
27 last barge movement out of Hay River would probably
28 occur sometime in early September.

29 Q So the --
30

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 A Trucking could continue
2 on, if you wanted to get back over the ice bridge at
3 Fort Simpson you would have to be back to Simpson
4 -- again I'm kind of reaching at this point.

5 Q Would you say that as
6 a general principle that the further down the valley
7 you go, the shorter the barging season is?

8 A Yes sir.

9 Q And consequently the
10 amount of time that you could save by trucking would
11 increase, would it not?

12 A I suppose in a very general
13 way you might be correct.

14 You could save time at
15 a cost.

16 Q Well, let me put another
17 proposition to you. Perhaps it would help if we had
18 the spread map, ^{the one that's} in the Fort Simpson route change
19 here, the very first one in the construction section.
20 If the applicant's assumption is correct and that the
21 highway to Fort Good Hope is completed prior to con-
22 struction, I notice that on this map Fort Good Hope
23 is just almost at the northerly end of construction
24 spread C .

25 A Yes sir.

26 Q So that a highway could
27 service construction spreads up to and including
28 construction spread C?

29 A Yes sir.

30 Q Could you go beyond that?

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 A Northward?

2 Q Just to B.

3 A I'm not sure¹ if you were
4 to extend that little line that separates B and C, I'm
5 not sure on a real topographic map whether it would
6 come right out at the dot at Fort Good Hope. It's
7 conceivable that you could truck material to Fort Good
8 Hope for the first winter activity of spread B, and
9 trucking would be over the so-called all-weather
10 highway.

11 Q Right.

12 A Because the direction
13 of travel is from south to north -- B, that is.

14 Q So that at least for
15 spreads C and D, you could cut the lead time required
16 for the placement of materials by using the highway.

17 A I think your general
18 statement is right, but I would not want to agree with it
19 100% without sitting down to check out rather thoroughly
20 the impact on trucking operations that arise from that
21 freezeup situation in the fall, on the Mackenzie,
22 Liard, Great Bear Rivers, just those three.

23 Q Well, what -- I'm trying
24 to understand truck movements. What sort of considera-
25 tions would arise? I mean what kinds of things would
26 you be measuring if you wanted to make that calcula-
27 tion?

28 A Sir, I should tell you
29 that we did consider that the highway would be an
30 available route for delivering materials, and that

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 we did allow for an estimated cost of trucking mater-
2 ials over that highway, so that we could make our
3 comparison with barging, and we could arrive at the
4 conclusion as to which was the cheaper method for
5 delivering materials.

6 Q I know that, but what
7 I'm interested in is which is the faster? Which is
8 the more flexible in terms of the shipping season? In
9 terms of time available to you, and I'm trying to
10 pin that down; I know that one may be more costly than
11 the other but what I'm trying to ascertain is what
12 advantage in time does one give you over the other?

13 A Then I have to agree
14 with you, the ^{existence} of the highway would give you
15 a longer period in which to deliver materials to your
16 stockpiles.

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1 Q Well, could we return
2 to the map again, then? If the highway were complete
3 to Fort Good Hope, you would still have to barge
4 material, you couldn't take it by road down for
5 construction spreads A and B?

6 A I think some people would
7 suggest, because it has been done, that you could
8 truck some materials over a snow road, but the volume
9 we're talking about, I wouldn't want to.

10 Q It wouldn't be a practical
11 alternative, is that what you're saying?

12 A I wouldn't think so, no.

13 Q Well I would like to make
14 this suggestion and ask you for your comments on it.
15 Perhaps Mr. Dau could comment as well.

16 Why couldn't you take the
17 work force and equipment that was available for spreads
18 A and B, move it down to assist the work force and
19 equipment in spread C and D, and complete those two
20 spreads in one winter? Is there any -- could that be
21 done? And leave -- and for the first winter have no
22 construction, no pipe^{laying} in spreads A and B?

23 WITNESS DAU:

24 A I'm sure it could be done,
25 yes.

26 Q So that if you were really
27 in a hurry to get spreads C and D done, you could
28 combine the work force and equipment available for
29 those four spreads, put them in spreads C and D and
30 ship your material up the highway, and have a time

1 saving that way, so that C and D could be done in one
2 season?

3 A I suspect that's possible,
4 yes.

5 Q And then at the end of that
6 season, you could put your equipment back on the barges
7 and ship them down to spreads A and B and complete A
8 and B in one season?

9 A Yes, I'm sure that's
10 possible.

11 Q So that in this way the
12 pipeline would be completed, ^{the} construction would be
13 completed by the projected date, but you could have
14 some flexibility with the start-up date? With the
15 preparation time that you needed to get construction
16 going?

17 A Flexibility with the start-
18 up date?

19 Q Well, with the date --
20 well, what I am suggesting is that the date on which
21 you have to start shipping materials to get ready
22 for the construction season, could be delayed by what-
23 ever advantage road gives you over the barging season.

24 A Theoretically that's
25 possible, yes, sir.

26 Q And yet you could complete
27 the pipeline by the projected finishing date?

28 A Under those circumstances,
29 I think you're right, yes.

30 THE COMMISSIONER: Mr. Bell,

O'Rourke, Dau, Williams
Cr. Exam. by Bell

1 you're putting this on the basis that ^{the} highway would
2 then be completed to Fort Good Hope and then beyond
3 in advance of the pipeline, is that the point?

4 MR. BELL: Well not beyond Fort
5 Good Hope.

6 Well, if the -- what I'm saying
7 is that if the -- what I'm suggesting to the panel is
8 that if the highway were completed to Fort Good Hope,
9 you could have that time saving by shifting the work
10 crews. If the highway were completed to Inuvik, you
11 could have the same time saving but you wouldn't have
12 to shift the work crews.

13 Q If the highway were the
14 primary mode of transporting material to stockpiles,
15 you would also be able to save whatever lead time is
16 required in financing and constructing the barges,
17 tugs and wharves that are presently planned, couldn't
18 you?

19 WITNESS O'ROURKE:

20 A Yes, sir, but could I
21 suggest --

22 Q You would probably have to
23 build some barges and some tugs and some wharves, but
24 you wouldn't have to build as many?

25 A As long as you have to build
26 any, you're almost in the same situation as having to
27 build a lot. Not entirely, but almost.

28 Q Well what about the --
29 perhaps I could refer you to the written submission,
30 your canned evidence if I can call it that, on page 2

1 of that. The first paragraph, it says:

2 "While we are satisfied
3 that the schedule described is feasible,
4 its attainability is dependent upon sub-
5 stantial financial commitments required
6 for critical items such as barges, tugs,
7 wharves and communications facilities
8 and logistics equipment. Based upon pre-
9 sently ascertained lead time require-
10 ments, it will be necessary for such
11 commitments to be made starting in mid-
12 1975, in order to accomplish this con-
13 struction schedule".

14 Now, is the lead time there
15 relating to the financial commitments, or is it relat-
16 to
ing/the time it takes to construct these items?

17 WITNESS DAU:

18 A It's both.

19 Q Both. Well suppose then
20 you have a lead time which it takes to construct a
21 barge, a given amount of time it takes to construct
22 a barge, and from what I understand you to say, if
23 you have a small number of barges or a large number
24 of barges, it doesn't make that much difference in
25 the lead time to construct them.

26 WITNESS O'ROURKE:

27 A There is a difference, but
28 --

29 Q I see.

30 A -- I couldn't give you a

1 firm answer as to what the difference would be.

2 Q Well assuming that it's
3 not a very big difference, can I put a hypothetical?

4 A I don't know whether
5 I could agree with you or not.

6 Q Well, what I would like to
7 know is, does it make any difference to the lead time
8 for financing, how many barges you have and how
9 many tugs and how many wharves?

10 A I have difficulty answering
11 that, because I don't know what Arctic Gas' ability
12 is for raising money.

13 Q Could Mr. Dau help us?

14 WITNESS DAU:

15 A I'll try. If your question
16 is whether -- if we could cut the barge requirements
17 in half, for instance, there's still a substantial
18 financial commitment required, and a substantial lead
19 time in manufacturing of that equipment. It's --
20 you know, obviously the financial equipment would be
21 -- the financial commitment would be presumably ^{be} half
22 but the reduction in lead time in manufacturing, I
23 suspect would be very minor, because it's related to
24 acquiring certain items of equipment, such as the
25 reduction gears and things like that.

26 Q Well are you saying then
27 that the lead time required, as it relates to the con-
28 struction of equipment, is not affected by -- within a
29 limited range, is not affected by the amount of
30 equipment that you ^{are} constructing, but that the lead

O'Rourke, Dau, Williams
Cr. Exam. by Bell

1 for financial commitments is affected by the amount
2 of money that you need?

3 A No, what I was saying is
4 that if we -- the financial commitment to build eight
5 tugs is X dollars.

6 Q Right.

7 A And I'm strongly suspect
8 that the financial commitment for four tugs is half
9 of X dollars.

10 Q I can't dispute that.

11 A Right. And the lead time
12 to construct them to meet the schedule, not the dollars,
13 the time, is essentially the same, whether your
14 building eight or four. That's my understanding.

15 Q Okay. Is the lead time
16 required to get X dollars, reduced by half if you
17 only need half of X dollars?

18 MR. MARSHALL: I don't think
19 this witness can answer that type of a question, Mr.
20 Commissioner.

21 He's talking about the lead
22 time to get X dollars?

23 MR. BELL: Well, I wasn't
24 the one who raised it, and it puzzled me too.
25 Are we going to have a witness who can testify on
26 this?

27 MR. MARSHALL: With respect, I
28 don't think Mr. Bell is following what Mr. Dau is
29 talking about. Mr. Dau hasn't been talking about
30 the lead time required to have a certain sum of money

1 available. He's talking about the lead time required
2 for construction, and being associated with the
3 commencement of construction of some of this equipment
4 or placing orders, there's a financial commitment
5 required, which is going to vary, depending upon the
6 size of the order placed. This witness isn't speaking
7 to lead times required in order to get monies
8 assembled that could be used to make such commitments
9 to suppliers.

10 MR. BELL: Well, I may have
11 misunderstood, but I thought that Mr. Dau said that
12 the lead time applied both to the financial commitments
13 and to the construction of the equipment?

14 THE COMMISSIONER: I think he
15 meant that the lead time begins when you make the
16 financial commitment, is that what you mean?

17 WITNESS DAU:

18 A I was not referring to any
19 lead time to acquire money. I'm only referring to
20 the time that you make the financial commitment, and
21 the point I was trying to illustrate was that the
22 size of the financial commitment that you make is
23 obviously related to the number of tugs that you
24 buy.

25 But in the time frame of when
26 you make the commitment, when you have to make the
27 commitment, it's not related to whether you buy
28 four or eight, it occurs essentially at the same
29 moment in time. If that moment in time was June 1st
30 of this year for eight barges, it would also be

O'Rourke, Day, Williams
Cr. Exam. by Bell

1 June 1st this year, in my view, for four barges.

2 I'm sorry, four tugs.

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Dau, O'Rourke, Williams
Cross-Exam by Bell

1 Q I must confess I'm still
2 a little confused by the evidence here then. What I
3 don't understand is why does the applicant in its
4 evidence say -- why do you mention financial commit-
5 ments at all then? I mean, surely everybody knows that
6 if you order material, you're going to have to have
7 the money to pay for it when it arrives. So I'm not
8 sure why was financial commitment mentioned at all?
9 Perhaps Mr. Marshall could assist us?

10 MR. MARSHALL: Well, Mr.
11 Commissioner, I think the paragraph on page 2, the
12 first paragraph in/^{the} prepared/^{direct} testimony is self-explana-
13 tory. What was being addressed by the witness there
14 was, as to whether or not Arctic Gas was prepared to
15 make substantial financial commitments prior to
16 obtaining necessary regulatory approvals. Now what
17 had been discussed was the types of substantial
18 financial commitments that might be required, and
19 among those would be those four logistics equipment,
20 and frankly, this witness is not able to go beyond
21 that point. If Mr. Bell wishes to pursue that and
22 it's thought to be in order, he may do so with Mr.
23 Horte.

24 THE COMMISSIONER: I think
25 you're right, Mr. Marshall. I don't think this is
26 getting us anywhere, Mr. Bell.

27 MR. BELL: I agree, I've come
28 to that conclusion.

29 Q Let me refer you, Mr.
30 Dau, to page 7 of the testimony, /^{the printed testimony} At the top of that

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 page or perhaps just to put it in context, this arises
2 under the subject of project control and there's a
3 list of items here which demonstrate how the applicant
4 is able to maintain close control over all construction
5 activities, and it says at the top of page 7:

6 "The applicant will retain authority to order
7 a stoppage of work,"

8 and I would like to know how the applicant stops the
9 work.

10 WITNESS DAU: With respect
11 to work that a contractor is doing?

12 Q Yes, ditching or laying
13 the pipe or whatever construction work happens to be
14 taking place at a given time?

15 A Mind you, that would be
16 a relatively simple way, you just refuse to pay for it.

17 Q Is there any other way?
18 I mean apart from refusing to finance it? Is there
19 any other way the applicant could stop the work?

20 A There would be a contrac-
21 tual relation between the contractors and the client.

22 Q He would have some
23 légal remedy, I suppose?

24 A Yes, I'm sure he would.

25 Q Well, suppose the con-
26 tractor refused to turn off the machines and refused
27 to instruct his men to stop working, what recourse
28 would the applicant have then?

29 MR. MARSHALL: This, with
30 respect, gets into an area that perhaps an Arctic Gas

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 witness could answer to.

2 MR. BELL: Well no, I'm sorry.
3 Perhaps I could just clarify the question.

4 MR. MARSHALL: Maybe Mr. Bell
5 as a lawyer could give some advice.

6 MR. BELL: Well, what I want
7 to know --

8 THE COMMISSIONER: Yesterday
9 Mr. Dau told us that he understood Arctic Gas at
10 each spread would have a project manager who would have
11 authority, according to Mr. Dau, to order a stoppage
12 of work. What more would he need? Are you suggesting
13 that the owner would say to its contractor, to stop,
14 and the contractor would say, "No, I want to keep
15 going"?

16 MR. BELL: No, what I'm trying
17 to get at, sir, is that there is no physical way of
18 preventing the contractor from continuing to do work,
19 and if the authority which is available to the appli-
20 cant were not available to it, the work could not be
21 stopped. I'm trying to find out whether that's true
22 or not. I mean is there a key to the ditching machine
23 or a lock on the fuel depot that the applicant can
24 resort to to prevent work from taking place?

25 A Yes, I'm sure there
26 is, sir. I don't understand the problem, sir.

27 Q Well, what I'm saying is,
28 if the authority is given to someone other than the
29 applicant to stop work, how is he going to do it? If
30 he doesn't have the contractual arrangement with the

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 contractor, how is anybody going to stop the work?

2 Well, I suppose this is getting into a later phase,
3 but this is a problem that we're going to have to
4 confront and I'd like to know from an engineering and
5 construction point of view, how the work can be stopped.
6 Is it physically possible?

7 A I can't quite -- it's
8 the
9 impossible for me to visualize /circumstances that
10 you have raised, sir.

11 THE COMMISSIONER: Mr. O'Rourke,
12 you said earlier that to deliver pipe from Hay River
13 to the spreads all along the Mackenzie Valley and the
14 Prudhoe Bay supply leg, you would have to double the
15 capacity of the -- double the present capacity
16 which you said was 500,000 tons. You'd have to double
17 that capacity, the present capacity of the Mackenzie
18 River barge system. You said that there were 195
19 barges on the river now. Did you say -- if you did, I
20 missed it, I'm sorry -- how many additional barges
21 would have to be built and introduced to the system?

22 WITNESS O'ROURKE: The appli-
23 cation refers to the necessity for adding 48 barges
24 and 8 tugs to the existing fleet. The number of
25 500,000 tons per year is not a complete picture because
26 it doesn't express distance over which that tonnage is
27 hauled, and in the years when the barging system on
28 the river now is handling 500,000 tons, quite a bit of
29 it is going into the Delta ^{it's} a long haul. To make a
30 proper comparison of the impact of this pipeline project
on what is happening on the river, we should really be

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 looking at ton miles, and I can't give you a very
2 on that.
3 good comparison right now, ^{1/} But it is one of the
4 considerations.

5 THE COMMISSIONER: The actual
6 capacity of the barges taken as a fleet would have to
7 be doubled, even if the number of ton miles was not
8 itself doubled; is that the point you're making?

9 A No, in our calculations
10 where we arrived at this number of 48 barges, they
11 did incorporate mileage, the ton mile element for
12 delivering materials.

13 THE COMMISSIONER:
14 All right.

15 MR. BELL: Well, Mr.
16 Commissioner, I am informed by my principals that
17 they would like to make a statement to the Inquiry.
18 Would it be possible to have a five-minute break before
19 we adjourn for that? I don't have any further questions
20 at this time.

21 MR. GOUDGE:
22 Mr. Commissioner, there are
23 one or two matters that I'd like to raise by way of
24 housekeeping. I know I was contemplating asking you
25 to break at 12:30 today in any event. One of the
26 concerns that appears to me to have arisen in connec-
27 tion with this panel is that participants in addressing
28 questions to them have caused them to search to the
29 corners of their recollection for specific facts. We
30 are now heading into a two-week break. I wonder
whether it might not be useful for all of us to con-
sider before we come back perhaps giving Mr. Marshall
and Mr. Genest and Mr. Carter as best we can, at least,

Dau, O'Rourke, Williams
~~Cross~~-Exam by Bell

1 some prior warning of those specific pieces of infor-
2 mation that we may be seeking in cross-examination?
3 I have the feeling that that would assist us all in
4 expediting the matter when this panel returns. I think
5 we intend to do it, and I'd ask the other participants
6 to consider that as well. That's one item.

7 The second item is I would
8 like to meet briefly with counsel at 12:30, to see if
9 we couldn't discuss once again in brief /tentative
10 terms a schedule at some distance down the road.

11 Aside from that, sir, I'm
12 in your hands as to the break.

13 THE COMMISSIONER: Well, before
14 we break, Mr.Goudge,there's one other matter that I
15 wanted to deal with. When we held preliminary hearings
16 last year inWhitehorse, a number of groups in White-
17 horse, groups such as the Chamber of Commerce and
18 environmental groups, and native organizations spoke.
19 Only the Council of Yukon Indians is represented on
20 a continuing basis at this hearing now. I asked Mr.
21 O'Rourke some questions about the impact of the
22 supplying of pipe to the North Coast route on the
23 economy of the Yukon. I'd like you to write to all of
24 the groups that appeared at the Preliminary Hearings
25 in the Yukon last year and send them a resume of some
26 of the problems that were discussed by Mr. O'Rourke
27 and tell them that you will supply them with an outline
28 of the evidence after this panel has completed its
29 testimony early in May, and tell them that we will be
30 coming to Whitehorse in due course, that they will have
plenty of notice, but that we would like to hear from

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 them about these issues at that time.

2 All right, well we'll take a
3 five-minute break then, Mr. Bell, and then we'll resume.

4 MR. MARSHALL: Sir, are we to
5 resume cross-examination of this panel today, or
6 are they excused?

7 THE COMMISSIONER: No, I don't think so.

8 MR. GOUDGE: I had assumed, sir, and
9 was to request of you that we break shortly after
10 12:30 and that we be permitted to race to the airport
11 as best we can for planes which leave shortly after
12 the noon hour.

13 THE COMMISSIONER: Somebody wants to
14 get a plane, is that -- we were supposed to go until
15 one today, but certainly the panel is excused until
16 one o'clock on Monday, May 12th, and thank you, gentle-
17 men, for coming, and we'll look forward to seeing you
18 again on Monday, May 12th at one o'clock, and if you
19 wish to take advantage of this break to race to the
20 airport, you have my blessing.

21 (WITNESSES ASIDE)

22 MR. MARSHALL: Sir, I think we are
23 in good shape. We're not leaving till P.W.A. does
24 and we have a couple of hours. I just took it from
25 Mr. Bell's comment that he is finished his cross-
26 examination and we're not going to resume cross-
27 examination of this panel in the remaining time. Is
28 that so?

29 THE COMMISSIONER: The panel is
30 excused and Mr. Bell asked that we have a break and

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 then Mr. Bell said his clients wish to make a state-
2 ment, so we will break, we'll hear the statement that
3 your clients wish to make, and then we'll adjourn the
4 hearing until May 12th. So we'll take a brief break
5 now.

6 (PROCEEDINGS ADJOURNED FOR FIVE MINUTES)
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2 (PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)
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4 MR. GOUDGE: Mr. Commissioner,
5 if we could reconvene, I was advised at mid-morning,
6 as Mr. Bell indicated, that his clients and certain
7 other of the major participants before you wished to
8 direct certain brief submissions to you now, subject
9 to your ruling, as to their future participation
10 and ways in which that future participation might be
11 made before the Inquiry in the light of present
12 circumstances.

13 I think Mr. Washee is to add-
14 ress certain remarks to you for the Brotherhood,
15 and Mr. Bell will ask to make certain submissionss
16 to you on behalf of the Canadian Arctic Resources
17 Committee, and Mr. Bayly on behalf of his client.

18 Mr. Washee?

19 MR. WASHEE: Thank you. This is
20 a statement on behalf of the Indian Brotherhood of
21 the Northwest Territories, and the Metis Association
22 of the Northwest Territories, to the Mackenzie Valley
23 Pipeline Inquiry.

24 Mr. Commissioner, I wish to
25 speak to you on a matter of urgent importance. A
26 serious crisis has arisen in terms of the continuing
27 and effective participation before this Inquiry of
28 the Indian Brotherhood and the Metis Association of
29 the Northwest Territories.

30 Our two organizations,

1 representing the Dené people of the Northwest Terri-
2 tories, were informed yesterday by the Minister of
3 Indian and Northern Affairs, that our budget request
4 for our participation before this Inquiry from April
5 the 1st, 1975 forward, of the \$445,000.00 has been cut
6 to \$145,000.00. At the same time, the budgets of the
7 other native organizations have been drastically
8 slashed as well, and the Northern Assessment Group
9 has apparently been denied any funding whatsoever.

10 Our budget submission consists
11 of a request for funding from April the 1st forward
12 on the same basis as had already been granted to us
13 for the past seven months. We are not aware of any
14 suggestions that past funding was excessive, and I
15 can assume that it was in fact needed in full to per-
16 mit our effective participation before this Inquiry,
17 both at the formal hearings here in Yellowknife and
18 at the community hearings.

19 It should be borne in mind in
20 assessing our needs for funding that the native
21 people and the native organizations are not the
22 groups who are asking that a pipeline be built. It
23 is the oil and gas companies and the government who
24 want the pipeline. In order to facilitate that
25 process, the government established this Inquiry.
26 We have no choice but to appear before it and argue,
27 as we have since 1971, that there should be no pipe-
28 line before a land settlement. We would have thought
29 that the ~~best~~ the government could do would be to
30 provide us with funding so that we could participate

1 effectively and present our case.

2 To be blunt, it is impossible
3 for us to see what the government is now doing as
4 anything other than a deliberate attempt to muzzle
5 us, and to cripple us in our participation before
6 the Inquiry. The right to freedom of speech is
7 surely the most elementary of human rights. The right
8 of native people to speak effectively before this
9 Inquiry has now been seriously curtailed.

10 As you know, the government has
11 not seen fit to guarantee clearly that they will let
12 this Inquiry finish its fullest and fair consideration
13 before the government makes a decision on the grant-
14 ing of the right-of-way.

15 Now, they add injury to insult
16 by denying to those participants who just happen to
17 have doubts about a pipeline, the right of effective
18 participation.

19 The government has now put us
20 in a difficult position. We have no alternative but
21 to assess most seriously and carefully the nature of
22 our continuing involvement. Indeed, we have already
23 begun that process within our own organizations.

24 I wish to assure you, Mr.
25 Commissioner, that it is our intent to continue to
26 participate in the Inquiry if it is humanly possible
27 to do so. We believe that this has been a full and
28 fair Inquiry which has given our people an unprecedent-
29 ed opportunity to state how they feel about the pipe-
30 line and about their land claims. We believe

1 strongly in our rights and in the virtue of our
2 position.

3 We do not feel comfortable with
4 one hand tied behind our backs by the government of
5 Canada, but we as Denè people have overcome greater
6 obstacles in the past.

7 I thank you for this opportunity
8 to raise this urgent matter with you. When the
9 hearings resume on May the 12th, 1975, we will be in
10 a better position to indicate specifically the nature
11 of our continuing involvement.

12 At that time, we may wish to
13 make representation to you on matters such as reorgani-
14 zation of the formal hearings and the ordering of
15 the community hearings.

16 Thank you very much.

17 THE COMMISSIONER: Thank you,
18 Mr. Washee.

19 MR. BELL: Mr. Commissioner,
20 I have been asked by the Canadian Arctic Resources
21 Committee, which is unable to be represented here
22 today, to make the following statement on its behalf:

23 The Canadian Arctic Resources
24 Committee joins in the concerns expressed today by
25 the native groups in ^{their} statements to the Mackenzie
26 Valley Pipeline Inquiry.

27 The nature and extent of
28 C.A.R.C.'s role as a major participant in the Inquiry
29 must be given particularly serious reconsideration
30 in view of the complete refusal of the government of

1 Canada to provide funds to continue the work of the
2 Northern Assessment Group. The effect of this refusal
3 is to deprive the Canadian Arctic Resources Committee
4 of the major part of the technical and scientific
5 support necessary to continue full and effective
6 participation in the Mackenzie Valley Pipeline
7 Inquiry.

8 The Canadian Arctic Resources
9 Committee intends to make a further statement on this
10 matter when the Inquiry reconvenes on May 12, 1975.

11 THE COMMISSIONER: Thank you,
12 Mr. Bell.

13 MR. BAYLY: Mr. Commissioner,
14 on behalf of C.O.P.E. and I.T.C., I would echo the
15 statement made by Mr. Washee and the concerns of the
16 Canadian Arctic Resources Committee.

17 Like those groups, C.O.P.E. has
18 been cut back drastically in its funding, and will
19 have to re-evaluate the level of participation that
20 it will be able to afford for the balance of the hear-
21 ings. We have not done more than begin this process
22 in the past few hours, and we realize that the amount
23 of funding that we have received will seriously impair
24 our effective participation.

25 Furthermore, we have placed a
26 good deal of reliance on the participation of C.A.R.C.
27 and N.A.G. in the formal hearings, especially the
28 first three phases, and without their being able to
29 actively participate as they had begun to do, we see
30 real problems in issues being brought before you, sir.

1 We, like the Indian Brotherhood
2 and the Metis Association, expect to be in a position
3 by the time we reconvene to make certain suggestions
4 which will facilitate our continued involvement.
5 Both C.O.P.E. and I.T.C. place a great deal of value
6 and consider these hearings to be up-to-date, full
7 and fair and our ability to participate in them has
8 not been impaired in any way.

9 We would hope that we would be
10 able to continue in some fashion as fully as possible.
11 We would try to make submissions for any reorganizat-
12 ion that would not place any of the other participants
13 at too great a disadvantage, realizing that our
14 limited funds may require some reorganization so that
15 they can best be distributed.

16 THE COMMISSIONER: Thank you,
17 MR. Bayly.

18 MR. VEALE: Mr. Commissioner,
19 on behalf of the Council for Yukon Indians, we wish
20 to advise you that our funding has likewise been
21 drastically reduced. The Council for Yukon Indians,
22 as it's centred in Whitehorse and represents the native
23 peoples of the Yukon Territory, has the additional
24 problem of transportation to and from the Inquiry,
25 and we certainly appreciate your indication of the
26 possibility of a hearing in Whitehorse.

27 However, on the basis of the
28 funding that we have now received, we are going to
29 reassess our continued participation in the Inquiry,
30 and it appears that we will either simply adopt a

1 monitoring role from Whitehorse and appearing on
2 occasion when possible, or we will have to consider
3 some of the phases to be simply written off from our
4 point of view, and be more active in other phases.

5 We appreciate very much that
6 the applicant has spent a great deal of money in
7 researching this project, and we wish that we could
8 respond in kind from our point of view.

9 We are also extremely concerned
10 about the participation of the Canadian Arctic
11 Resources Committee, and the Northern Assessment
12 Group, as we had been depending a great deal on those
13 organizations for back-up services to us. We appre-
14 ciate that you have sincerely set an objective of
15 having a fair and full Inquiry, and we regret that
16 our funding may inhibit that objective,

17 Thank you, sir.

18 THE COMMISSIONER: Thank you,
19 Mr. Veale.

20 MR. GOUDGE: Mr. Commissioner,
21 may I suggest that we adjourn until Monday, May 12th
22 at 1:00 p.m.?

23 THE COMMISSIONER: All right,
24 the Inquiry will reconvene Monday, May 12th at 1:00
25 p.m.

26
27 (PROCEEDINGS ADJOURNED TO MONDAY, MAY 12TH,
28 1975 AT 9:00 A.M.)
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30

347
M835
Vol. XXXV

AUTHOR

Mackenzie Valley pipeline inquiry:

TITLE

Vol. XXXV 23 April 1975.

DATE	INITIALS

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M835
Vol. XXXV

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T. CREBER

MACKENZIE VALLEY PIPELINE INQUIRY

Government
Publications

IN THE MATTER OF AN APPLICATION BY CANADIAN ARCTIC GAS
PIPELINE LIMITED FOR A RIGHT-OF-WAY THAT MIGHT BE GRANTED
ACROSS CROWN LANDS WITHIN THE YUKON TERRITORY AND THE
NORTHWEST TERRITORIES FOR THE PURPOSE OF THE PROPOSED
MACKENZIE VALLEY PIPELINE

and

IN THE MATTER OF THE SOCIAL, ENVIRONMENTAL AND ECONOMIC
IMPACT REGIONALLY OF THE CONSTRUCTION, OPERATION AND
SUBSEQUENT ABANDONMENT OF THE ABOVE PROPOSED PIPELINE.

(Before the Honourable Mr. Justice Berger, Commissioner)

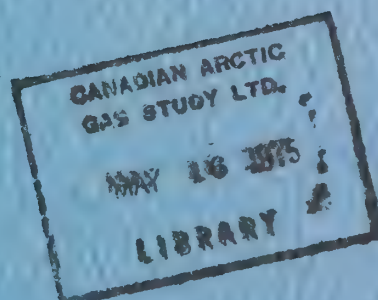
Yellowknife, N.W.T.

May 12, 1975.

PROCEEDINGS AT INQUIRY

VOLUME XXXVI

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Vol. XXXVI



APPEARANCES:

Mr. Ian G. Scott, Q.C.	
Mr. Stephen T. Goudge,	
Mr. Alick Ryder and	
Mr. Ian Roland	for Mackenzie Valley Pipeline Inquiry;
Mr. Pierre Genest, Q.C.	
Mr. Jack Marshall,	
Mr. Darryl Carter, and	
Mr. John Steeves	for Canadian Arctic Gas Pipeline Limited;
Mr. Reginald Gibbs, Q.C.	
Mr. Alan Hollingworth	for Foothills Pipelines Ltd.;
Mr. Russell Anthony,	
Prof. Alastair Lucas	for Canadian Arctic Resources Committee;
Mr. Glen W. Bell and	
Mr. Gerry Sutton	for Northwest Territories Indian Brotherhood and Metis Association of the Northwest Territories;
Mr. John U. Bayly	for Inuit Tapirisat of Canada and the Committee for Original Peoples' Entitlement;
Mr. Ron Veale and	
Mr. Allen Lueck	for Yukon Native Brother- hood;
Mr. Carson H. Templeton	for Environment Protect- ion Board;
Mr. David Reesor	for Northwest Territories Association of Muni- cipalities
Mr. Murray Sigler	for Northwest Territories Chamber of Commerce

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May 12, 1975.

(PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

MR. SCOTT: Mr. Commissioner, Mr. Anthony isn't here today, but Mr. Lucas advised me that he had something that he wanted to raise with the Commission first, if he could, please.

THE CHAIRMAN: Excuse me, Mr. Lucas, there's a lectern there if you want to -- I think you're on your own, I think you have to get it yourself.

MR. LUCAS: Mr. Commissioner, the Canadian Arctic Resources Committee wishes to present a motion to the Inquiry; our application is for an adjournment of the formal part of the Inquiry for a period of two weeks. Let me explain.

Last Friday it was learned by the Canadian Arctic Resources Committee that funding that had been provided by the Federal Government for the Northern Assessment Group has been completely discontinued. The Northern Assessment Group is the technical group that has provided essential scientific support for the environmental groups and the native groups that are participating in this Inquiry, and since the participation of CARC depends almost exclusively on support that the Northern Assessment Group has offered to this point, CARC's ability to participate in the Inquiry as a major participant is now in a great deal of doubt and it's with this background in view that I make the motion.

1 In the Inquiry the Canadian
2 Arctic Resources Committee represents a number of
3 environmental groups, including the Canadian Nature
4 Federation, the Federation of Ontario Naturalists,
5 Pollution Probe and Energy Probe, Canadian Scientific
6 Pollution Environmental Control Society, S.P.E.C., and
7 CARC is the only environmental group, the only
8 environmental interest that is a full-time major
9 participant in the Inquiry, and has provided in our
10 view, at least, a dimension to the Inquiry that none
11 of the other participants have.

12 The discontinuance of this
13 funding for the Northern Assessment Group has made it
14 impossible for CARC to obtain the advice necessary to
15 play its role in the Inquiry in the current phase,
16 and in particular its Northern Assessment Group advis-
17 ors on construction and implementation and
18 operations and maintenance are unable to be here at
19 the moment, due to the scrambling around that has
20 taken place over the past two weeks have really been
21 unable to adequately prepare for cross-examination of
22 these panels, and for that reason I'm simply at this
23 stage unable to properly cross-examine the construction
24 and operations and maintenance panels; and that, Mr.
25 Commissioner, is the immediate reason for the adjourn-
26 ment that we seek.

27 Now there are also some other
28 reasons which I would like to outline.

29 First of all, in view of the
30 cut-off of funds for the Northern Assessment Group,

1 the resources and the personnel of the Canadian Arctic
2 Resources Committee must be mobilized to meet this
3 crisis. We found out about the failure to fund on
4 April 21st, which was the last day of the previous
5 session of this Inquiry, and quite frankly, Mr. Commis-
6 sioner, during the break CARC and NAG personnel have
7 really done very little else but scramble around calling
8 people in the Federal Government and writing letters to
9 people and getting very few responses. We discovered
10 finally after a great deal of wheel-spinning, only this
11 past Friday that yes, it was really true, the funding
12 for the Northern Assessment Group had been stopped
13 completely.

14 So the resources of CARC have
15 got to be mobilized to meet the crisis that we face at
16 the moment, and the time is requested therefore to
17 permit us to get the CARC Board together and also to
18 consult the various native and environmental groups
19 that are participating in the Northern Assessment Group
20 and time is also required to re-assess the Northern
21 Assessment Group's role in advising CARC and in advising
22 the native groups, and to determine whether resources
23 are available to provide the environmental advice neces-
24 sary to carry out full and effective cross-examination
25 of the construction and operation and maintenance panels.
26 I'm speaking in that context not only of CARC but of
27 the ability of the native groups to carry out cross-
28 examination with respect to environmental issues for
29 the construction and operation and maintenance panel
30 witnesses.

1 Frankly, Mr. Commissioner,
2 we find it rather incredible that the Federal
3 Government has decided not to continue funding the
4 Northern Assessment Group. The bulk of the Northern
5 Assessment Group's major research projects have now
6 been completed and this research we must point
7 out is on subjects that are not being investigated
8 by any of the other parties to this inquiry, and what
9 this lack of funds for the Northern Assessment Group
10 is going to mean is that some of this work is not
11 going to be completed, it may also mean that it will
12 be difficult or impossible for CARC to present
13 the work that has been completed as evidence before
14 this Inquiry and in view of the fact that a considerable
15 sum has already been invested by the Federal Government
16 in producing the work to this point, it seems simply
17 amazing to us that the funds are not being made avail-
18 able to ensure that that work is brought before this
19 Inquiry.

20 If this lack of funds means
21 that Northern Assessment Group must be disbanded and
22 that the Canadian Arctic Resources committees and
23 environmental support staff will disappear, then the
24 result seems to us will be that the environmental in-
25 terests will no longer be represented on a continuing
26 basis in this Inquiry and this is particularly important
27 in our view since the government environmental agency,
28 namely the Department of the Environment is not formally
29 present at the Inquiry and the result has been that
30 CARC has been required in many respects to do the job

1 of the Department of the Environment in the Inquiry
2 as well as to shoulder the responsibility for presenting
3 an independent environmental assessment.

4 Now, in the past, Mr. Commissioner,
5 major northern resource decisions were made almost
6 exclusively in house by Government and industry with
7 virtually no public airing of the issues involved.
8 There are many examples that can be cited. Now, against
9 this background, the establishment of this Inquiry to
10 conduct a full and open inquiry into the environmental,
11 social and economic impacts of proposals to construct
12 Mackenzie Valley pipelines seems to signal a very
13 important change in Government attitude.

14 The original decision by the
15 Department of Indian and Northern Affairs to fund
16 public interest groups in this inquiry through the
17 medium of the Inquiry, seemed to us to be a very
18 hopeful precedent and it was in this way that the
19 Northern Assessment Group was funded originally.

20 It seemed at that stage that
21 the Government of Canada was at last recognizing the
22 necessity for full and effective representation by
23 public interest parties and also recognizing the
24 rather elementary fact that substantial resources,
25 financial and in terms of manpower, are necessary to
26 ensure that the public interest is properly and
27 adequately and fully represented on a continuing
28 basis in an inquiry of this kind.

29 Unfortunately the hope that
30 was generated by what seemed to be nine months or so

1 ago a rather enlightened new Government policy has
2 dimmed considerably. The Government has taken a number
3 of actions that suggests that it really was not very
4 serious about a full and open inquiry in the first
5 place and it was not very serious about insuring that
6 the public interest elements relevant to the issues
7 before this inquiry were fully represented. Now,
8 I am putting aside Mr. Sharpe's opening day statement,
9 the Government has done a number of things. It
10 has failed to co-operate in the production and discovery
11 of relevant documents under the Inquiry rules, in
12 fact we suggest it has been guilty of obstruction-
13 ism in this respect. It has attempted to prevent
14 government employees in Environment Canada from
15 appearing as witnesses at this Inquiry and from assisting
16 participants in the Inquiry.

17 Fortunately, this problem has
18 been resolved. The Government has also attempted to
19 prevent the Inquiry from considering the application
20 by the Mackenzie Delta gas producers for a right-of-
21 way for gathering lines and land for treatment plant
22 and related facility sites. The Federal Government
23 has also attempted to prevent territorial government
24 employees from participating in the Inquiry at all.
25 Fortunately, most of these problems that I have
26 cited have been resolved. The point I am making is
27 that they were actions taken by the Federal Government
28 that have in some measure gone to undermine the
29 credibility of the Inquiry and to restrict its scope.

30 Now, CARC with the assistance

1 of the Northern Assessment Group has opposed these actions
2 which we suggest are government sandbagging attempts.
3 Now, we have strived to insure that the environmental
4 interest was fully represented in the Inquiry and that
5 all information including that information residing
6 within the musty confines of the Federal Government
7 is brought before the Inquiry and therefore before the
8 public.
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1 Much of the Northern Assess-
2 ment Group research, Mr. Commissioner, involves issues
3 that the Federal Government appears not to be terribly
4 anxious to discuss publicly. Now included in this
5 category are questions of long-term planning for
6 transportation in the Mackenzie Valley corridor, and
7 the question of institutional arrangements that may be
8 necessary to properly oversee the construction and
9 operation of gas pipelines in the Mackenzie Valley.

10 Now a good deal of the major
11 research has been conducted by the Northern Assessment
12 Group and most of which is now completed, is on these
13 subjects. Now these questions involve assessment of
14 the adequacy of current government policies and depart-
15 mental organization and departmental competence, and
16 this work is undoubtedly perceived, particularly by
17 the Department of Indian & Northern Affairs, as a threat
18 to its strangle-hold on Northern Government and admin-
19 istration. For that reason the Canadian Arctic Resour-
20 ces Committee and the Northern Assessment Group has
21 received rather less than full co-operation from the
22 Department in its research on these particular subjects.

23 Now suddenly last Friday --
24 and we suggest with some malice -- the funding to
25 continue full and active participation in the Inquiry
26 by CARC and by the Northern Assessment Group was
27 completely discontinued, and we suggest that this
28 action by the Government of Canada represents another
29 in the series of actions that I've already outlined
30 calculated to undermine the effectiveness and the

1 credibility of the Inquiry itself. In our view it's
2 simply an attempt by the Government of Canada to sab-
3 otage the efforts of the Inquiry to ensure full and
4 effective public participation in these proceedings.

5 Now Mr. Commissioner, follow-
6 ing the initiation, the indication rather, some two
7 weeks ago that there would be no further funding for
8 the Northern Assessment Group, the Minister of Indian
9 & Northern Affairs very gallantly, perhaps, undertook
10 to re-consider the matter and as Commission counsel
11 is undoubtedly aware, that toward the end of the two-
12 week period, that is late last week, we had some re-
13 ason to believe that funding for the Northern Assessment
14 Group would in fact be continued.

15 Now during that period just
16 as the Inquiry itself, after March 31st, continued to
17 operate and to incur obligations in anticipation of an
18 additional allotment of funds, the Canadian Arctic
19 Resources Committee and the Northern Assessment Group
20 did the same, and we continued our preparation efforts
21 as best we could in between trying to place phone calls
22 to various government officials to find out what was
23 happening. Word was received only last Friday, as I've
24 already mentioned, that there would be no continued
25 funding, and the result is that the Canadian Arctic
26 Resources Committee and the Northern Assessment Group
27 have incurred substantial debts, and in order to con-
28 tinue participation in the Inquiry the groups would
29 simply have to incur more debts. The original funding,
30 I should mention, was only till the end of the fiscal

1 year, March 31; so we've been operating on a wing and
2 a prayer and a lot of promises since that date, in effect.

3 It's necessary, Mr. Commissioner,
4 for the two organizations to re-assess its participa-
5 tion in the Inquiry and to determine how they can meet
6 these outstanding obligations and still continue to
7 play some role in the Inquiry.

8 Now I want to make it clear,
9 Mr. Commissioner, that the Canadian Arctic Resources
10 Committee, with the Northern Assessment Group's support,
11 we want to be here. We want to be a full-time active
12 participant in the Inquiry, and we want to demonstrate
13 to the Inquiry and to the public the need and the
14 value of public participation of the kind that has made
15 the effort by the Northern Assessment Group and the
16 Canadian Arctic Resources Committee possible to this
17 date. But in order to permit us to re-assess our
18 position and to mobilize the few resources that we
19 have at this stage, or are able to generate perhaps
20 in the next short time, the result, it seems to us,
21 is inescapable; we must have an adjournment to re-
22 evaluate our future role in the Inquiry.

23 Now Mr. Commissioner, we're
24 not standing pat. We're not suggesting to you that
25 we are about to gather up our marbles and go home.
26 The Canadian Arctic Resources Committee has a nation-
27 wide direct mail fund-raising campaign that's ready to
28 go, and we're very hopeful that in the next few weeks
29 results will be available that will give us some indi-
30 cation that that effort will assist us to remain here

1 as a major participant.

2 Now in addition, the Canadian
3 Arctic Resources Committee has formally requested Can-
4 adian Arctic Gas and Foothills Pipelines Limited to
5 provide the necessary funds to ensure the continued
6 representation of the environmental interests in this
7 Inquiry. We are certain that the applicants before
8 the Inquiry are just as anxious as we are to be sure
9 that the public interest is represented in these
10 proceedings on a continuing basis.

11 Now the following letter was
12 written by Dr. Andrew Thompson, Chairman of the Canadian
13 Arctic Resources Committee, to Mr. Robert Blair of
14 the Foothills parent, Alberta Gas Trunk Line, and to
15 Mr. William Wilder, the Chairman of Canadian Arctic
16 Gas Study Limited, and it's quite short, Mr. Commissioner,
17 and I'd like to quote it in full. Now similar letters
18 were written to both of these gentlemen.

1 They read as follows:

2 "Gentlemen, you are aware that the
3 Government of Canada has refused
4 the request of the Northern Assess-
5 ment Group for \$140,000 to continue
6 its work as the scientific and technical
7 support for the environmental intervenors
8 in the Berger Inquiry. The Canadian
9 Arctic Resources Committee is the
10 principle environmental intervenor
11 and the only one playing a continuing
12 role throughout the hearings.

13 Therefore, we are especially de-
14 pendent on the successful continuation
15 of the work of the Northern Assessment
16 Group. The Canadian Arctic Resources
17 Committee has been given the responsibility
18 to organize and manage the Northern Assessment
19 Group and to be a channel through which its
20 funding is provided. In these circumstances
21 we are inviting you to provide to the
22 Northern Assessment Group the financial
23 support which the Government of Canada has
24 refused. You have initiated the pipeline
25 applications and much to your credit have
26 expended large sums of money to undertake
27 environmental assessment for the Berger and
28 the National Energy Board hearings. In fact,
29 it has been said that in excess of \$70 million
30 has been spent for these purposes. On our

1 side the \$140,000 we are asking for is
2 a relatively modest sum and we hope you
3 will consider this request favourably.
4 We invite you at your convenience to make
5 a full audit of the Northern Assessment
6 Group accounts and we will provide you with
7 budget details from our Ottawa office.
8 Because the hearings are now underway and
9 because this matter is of such serious
10 consequence to the success of the hearings,
11 we must ask you to give us a reply one
12 way or the other by Friday, May 9th."

13 And that letter is dated April 28, 1975. I should
14 explain, Mr. Commissioner, that Dr. Thompson was
15 subsequently in touch by telephone with these
16 gentlemen when it became obvious that the May
17 9th deadline referred to in the letter was rather
18 unrealistic in the circumstances. So, the request
19 having been made to the applicants, again, time is
20 required to permit the applicants to consider this
21 request and to respond to it.

22 Now, to just summarize, the
23 Canadian Arctic Resources Committee is requesting an
24 adjournment because the Government of Canada's action
25 in cutting off the funding for the Northern Assessment
26 Group makes it impossible for CARC to obtain the
27 technical support necessary to participate effectively
28 in the current phase of the hearings. We also require
29 time to reassess our position and to attempt to
30 finance continued participation in the Inquiry through

1 other means and I have mentioned some of the actions
2 that we will be taking in that regard. The Canadian
3 Arctic Resources Committee is determined to make
4 every effort to continue as a major participant in
5 the Inquiry. We will do our utmost to counteract
6 what we are certain is a calculated attempt by the
7 Government of Canada to eliminate the Canadian
8 Arctic Resources Committee and the Northern Assessment
9 Group from a major role in the Inquiry.

10 The very fact, Mr. Commissioner,
11 that the Government would take this action to rid itself
12 of an environmental interest that has perhaps been
13 too effective in exposing the shortcomings of the
14 Government's past record of environmental protection
15 suggests the need for continued strong public interest
16 participation in the Inquiry.

17 Now, in view of the circumstances
18 that I have outlined and the position that the Canadian
19 Arctic Resources Committee finds itself in, Mr.
20 Commissioner, I would request an immediate ruling on
21 this application, and that is the submission.

22 THE COMMISSIONER: You want
23 a two week adjournment?

24 MR. LUCAS: We are asking for
25 a two week adjournment, an adjournment of ten working
26 days so effectively we are suggesting an adjournment
27 until the Inquiry convenes its community hearing in
28 Hay River on May 26th.

29 MR. BELL: Mr. Commissioner,
30 on the occasion of our last appearance before you,

1 the Indian Brotherhood and the Metis Association of
2 the Northwest Territories said that we will attempt
3 today to indicate what if any changes in the scheduling
4 and ordering of the hearings might be necessary from
5 our point of view in light of the cutbacks in
6 funding.

7
8 Unfortunately, we are not
9 in a position to do that today, instead we are left
10 no choice but to support this motion to adjourn in
11 the hope that matters will become clearer. It is
12 difficult for us to plan our participation when
13 uncertainty persists with respect to our own funding.
14 On May 9th we received the following telex from
15 Mr. Buchanan and I think it would be useful to have it
16 in the record. It says:

17 "Further to my telegram of April 21st, and
18 in response to subsequent requests for
19 additional funding related to the Mac-
20 kenzie Valley Pipeline Inquiry, I am pleased
21 to inform you that the Treasury Board has
22 approved an additional \$100,000. Once
23 the allocation of this money to the various
24 groups has been determined, I will be
25 in touch with you again."

26 Well, we hesitate to look a gift horse in the mouth,
27 but there is a good deal of ambiguity as to what this
28 telex is about. The Native organizations originally
29 asked for \$870,000 and got \$300,000. Now, it appears
30 we have been granted another \$100,000. But even with
this additional sum we are still far short of having

1 sufficient funds to enable us to participate effectively.
2 We want to emphasize that we need this money and
3 we will take it, but we resent being put by the
4 Government in the position where we have constantly
5 to go to it with cap in hand.

6 With respect to the
7 Northern Assessment Group we can only say what we
8 have said before, that without the Northern Assessment
9 Group, our effective participation is jeopardized. It
10 was understood at the outset by all concerned, including
11 the Government that the Native organizations were
12 relying on the Northern Assessment Group for environmental
13 and technical expertise.

1 It was made clear that
2 environmental matters are critical to native people.
3 Nevertheless, the government seems to be playing some
4 sort of strange game here, but it is toying with
5 matters which are of the first importance to us.

6 We believe that the govern-
7 ment should stop and that it should use the proposed
8 period of adjournment to deal with the Northern Assess-
9 ment Group in a serious way and to give the Northern
10 Assessment Group the funding it needs.

11 By refusing the Northern
12 Assessment Group any funding and at the same time giv-
13 ing the native organizations a little more, the govern-
14 ment has managed to muddy the waters further. In all
15 probability it hoped that the native organizations
16 and the Northern Assessment Group would fall to squab-
17 bling among themselves. The government is in effect
18 throwing the dogs a bone in the hope that they will
19 fight over it.

20 Well, we wish to take this
21 opportunity to communicate to the government that
22 its tactics are serving only to unite us. Mr. Commis-
23 sioner, while we have doubts about the Government of
24 Canada, we continue to have full confidence in this
25 Inquiry and we wish to assure you of our intention to
26 continue to participate to the best of our ability.

27 To conclude, we reiterate our
28 support for the motion to adjourn in order to give the
29 Northern Assessment Group and the Canadian Arctic
30 Resources Committee a reasonable opportunity to seek

1 funding and to enable us to clarify our position with
2 respect to our participation in the Inquiry.

3 That is our respectful sub-
4 mission.

5 MR. BAYLY

Mr.

6 Commissioner, COPE and I.T.C. support CARC's motion
7 for an adjournment. It is with some reluctance that
8 we do request an adjournment because in many ways the
9 hearings have been going on without the necessity for
10 this sort of thing. We have been able to carry on the
11 business in a very difficult Inquiry with widely diver-
12 gent interests and largely have been able to resolve
13 our differences. I believe we have come to a stage where
14 we must have some clarification from the point of view
15 of the native groups about the position of CARC and
16 NAG. As the Inquiry no doubt is aware, and the
17 participants in it, we place heavy reliance on CARC and
18 NAG's participation both as support for our input
19 into the first three phases and we rely on their in-
20 dependent input into these phases because we just don't
21 have the kind of personnel that can do this sort of
22 assessment.

23 Now at this point we don't
24 know where we stand. We don't know whether we are going
25 to have to take on a lot of this work ourselves. We
26 cannot tell from the telegram that Mr. Bell read to
27 the Commission whether or not we are to act as some
28 sort of a conduit for funds to scientific people. In
29 other words, whether we are to pick up the pieces
30 after CARC and NAG has perhaps ceased to participate

1 in the Inquiry. We want very much to go ahead, Mr.
2 Commissioner, but we are finding it very difficult
3 because we are trying to do two things at once.

4 (1) is to prepare for cross-examination and examination
5 in chief in a very difficult Inquiry, and in that the scope
6 and the technicalities of the various matters being
7 discussed require all our attention and all our
8 financial allotments, and at the same time we are
9 trying to discuss and negotiate and figure out who is
10 going to be able to do what in the Inquiry.

11 We at this point are not even
12 in a position, as we thought we might be, on reconven-
13 ing, to suggest whether or not we would be requesting
14 some sort of re-organization of the phasing of the
15 hearings because the re-organization of the phasing
16 would depend on the participation of CARC and NAG, and
17 until we have some clarification of where they stand,
18 if they stand at all as a major participant, we will
19 be unable to do that. Our funding does not permit us
20 to negotiate with the government, as I say, and concen-
21 trate on the hearings at the same time.

22 We are relying even on this
23 panel to a large measure on CARC and NAG and their
24 cross-examination, while my cross-examination is prepared
25 it is prepared on the understanding that some matters
26 would be left to the Northern Assessment Group to pick
27 up. I would submit that because they are not ready,
28 that we fully support their motion to adjourn until
29 such time as we will have some sort of clarification
30 or they will have explored the various alternate

1 avenues open to them for funding.

2 MR. GENEST: I guess Mr.
3 Hollingworth is still in the waiting room in Edmonton,
4 Mr. Commissioner.

5 I don't wish to get into the
6 merits or otherwise of the quarrel that appears to
7 exist between my learned friend's clients and the
8 Government of Canada, except to make this remark, Mr.
9 Commissioner, that a good deal of the argument that
10 has been addressed to you today would better be addres-
11 sed in Parliament or to the electorate, because what
12 has been made by the government has obviously been a
13 decision that is political in nature. They have in
14 their wisdom or otherwise, I don't wish to take sides
15 in any respect on that issue, made a decision about
16 funding that in my respectful submission is really
17 outside your functions as a Commissioner appointed
18 by order-in-council to conduct this Inquiry.

19 My submissions are therefore
20 limited to the request for a two-week adjournment. I
21 ask you not to allow that motion. All of my friends
22 came here or were here before this Inquiry adjourned,
23 on call to cross-examine the construction panel at
24 least, before the April adjournment; if our examination
25 in chief had been shortened, if the previous panels
26 had been shorter, they would have had to cross-examine.
27 Mr. Bayly has quite fairly said that he has a prepared
28 cross-examination, he's ready to cross-examine. He is,
29 of course, counting on the Canadian Arctic Resources
30 Committee counsel to cover certain points, and I'm going

1 to come to that in a moment.

2 Mr. Bell's cross-examination
3 from what I understood, was finished or almost finished,
4 which would leave Commission counsel, who has been, I
5 presume, getting ready to cross-examine these panels.
6 Summaries of testimony have been furnished to them
7 sometime ago, so what my suggestion is, sir, is that
8 if you are satisfied that the reasons advanced by
9 CARC for their incapacity to proceed at this stage,
10 because of their financial problems, if you're satis-
11 fied that these are sound, my suggestion is that the
12 Inquiry should proceed with cross-examination by those
13 parties who are ready. If CARC is unable to cross-
14 examine fully, it may be ready -- I think I heard
15 Mr. Lucas say that some preparation has occurred --
16 it may be ready to cross-examine in part. I would
17 have no objection whatever to a recall of any of these
18 panels which are testifying, or have yet to testify in
19 Phase 1, at some later stage to answer questions that
20 CARC are unable, because of a lack of preparation or
21 a lack of funds, to get advice to formulate at this
22 stage. But in my submission it would be a very serious
23 matter to adjourn these hearings now for this two-week
24 period that they seek.

25 The time-table of the Inquiry
26 as far as Phase 1 is concerned, leaves us two weeks to
27 finish, hopefully, Phase 1 as far as the applicants are
28 concerned, with Mr. Horte's testimony. The week of
29 the 26th is given over to the Hay River hearing. We
30 have three days in the week of June 2nd devoted to

1 the Environmental Protection Board, who are a major
2 participant in this Inquiry, and whose concern is the
3 environment. I add that paranthetically, leaving
4 us two days to complete whatever formal part of the
5 evidence of Arctic Gas is still outstanding.

6 Then the schedule calls for
7 the Inquiry not to reconvene in a formal way, as I
8 understand it, until August, the months of June and
9 July being given over to community hearings.

10 We, sir, have problems,
11 logistical problems with witnesses not only h~~ere~~ but
12 before the Federal Power Commission in Washington and
13 we understand before the National Energy Board later
14 on this summer.

1 It is going to be difficult
2 for Arctic Gas to try and get these witnesses back
3 after, what I submit, is a serious interruption. It
4 is not as if we were just going to go on with the
5 formal hearings throughout June and July. Two weeks
6 may seem small in that time frame but we have to look
7 at it, in my submission, in what is left to us in
8 the -- by way of formal hearings to complete the
9 case of the applicant in phase 1.

10 Now, my submission is that there
11 is no great prejudice to CARC or to the Native groups
12 in proceeding in the way in which I have suggested.
13 Commission Counsel is undoubtedly prepared to cross-
14 examine on these aspects, he has a staff -- if matters
15 are left out that would be included in the cross-
16 examination by reason of the inability of CARC to
17 properly cross-examine, they can be saved, and I
18 undertake to make these witnesses available at a
19 convenient time so that this cross-examination can
20 proceed and that your objective of a full and fair
21 inquiry can be achieved. I would add this observation,
22 sir, that what are we going to get in two weeks time,
23 if CARC is unable, regrettably, to get its financial
24 problems sorted out, if the Native groups are unable
25 to persuade the Government to change the stance that
26 it has seemed to have taken pretty firmly, are we
27 to adjourn indefinitely? In my submission, that would
28 be doing violence to the order-in-council constituting
29 this Inquiry. There is no law that says that groups
30 must be funded. There is nothing in the Act under which

1 this inquiry is constituted, that imposes a requirement
2 for the funding of participants. There is nothing in
3 the order-in-council itself which does so. YOur duty,
4 and I say this with the greatest respect, is to
5 proceed with the Inquiry as best you can. I know
6 how valuable the contribution of these groups are,
7 but if at a certain point in time their funding, which
8 is a matter of political decision of the Government for
9 which they can hold accountable in another place and
10 before other tribunals and forums, if that is lacking,
11 their participation will have to be modified or limited
12 in some way, but you have, in my respectful submission,
13 no choice, but to go on with this Inquiry as best you
14 can.

15 So, my suggestion, sir, is that
16 let them take these two weeks to reconsider their
17 position, let the evidance go in and let the witnesses
18 be recalled so that they will have had, if they are
19 successful in getting their full input back into
20 their organizations, they will have ample opportunity
21 to cover the grounds and in the meantime a serious
22 delay in the progress of this inquiry will not
23 have occurred.

24 I should add, sir, that my
25 -- in response to my learned friend, Mr. Lucas's
26 reference to a request to Arctic Gas, to assist in
27 the funding of CARC, that a reply was given to Mr.
28 Thompson, the Chairman of the Canadian Arctic REsources
29 Committee, and I feel that I should read it into the
30 record. It is a letter by Mr. Wilder dated May 7th and

1 it says as follows:

2 "Dear Mr. Thompson,

3 We have your letter of April 28, 1975.
4 As you point out in your letter our company
5 has spent in excess of \$70 million in
6 planning for and assessing the impact of
7 the pipeline which we are proposing to
8 construct, we would suggest that the
9 sum of money expended by our group is
10 probably the largest sum ever spent before
11 a permit authorizing construction has been
12 issued. The continuing costs which we
13 are incurring without assurance of certifi-
14 cation of our project is a matter of in-
15 creasing concern to our consortium and every
16 effort is being made to control expenditure.

17 As you know, we have funded the
18 Environmental Protection Board for the
19 purposes of providing an independent
20 environmental assessment of our proposals..."

21 And I might add, sir, that the money provided to
22 the Environment Protection Board is in excess of
23 \$700,000.

24 "We will however place your request before
25 our management committee which is required
26 to authorize expenditures such as that
27 requested by you. It is not possible for
28 this to be done prior to the 9th of May, but
29 it will be brought forward to the Committee
30 at the earliest possible date.



1 Kindest regards, yours sincerely, William P.
2 Wilder"

3 I am instructed, sir, that the management
4 committee of Canadian Arctic Gas will be meeting on
5 May the 28th at which time this matter will be
6 considered. But I reiterate that the evidence at
7 this stage should go forward with the understanding
8 that any group who demonstrates for reasons which
9 seem good and sufficient to you, they have not been
10 able from now to the end of phase 1 to make the
11 participation they wanted to make, then the
12 witnesses who testified on the subjects in question
13 will be recalled.

14 So, I ask you, sir, to
15 proceed with the Inquiry at this stage.

16 THE COMMISSIONER: Mr. Scott,
17 we left Mr. Hollingworth in the waiting room of the
18 Edmonton airport. It is a matter of real importance, as
19 Mr. Genest says and I am wondering how we can arrange to
20 hear from Foothills.

21 MR. GENEST: I could phone him
22 if we were to adjourn for a few minutes.

23 MR. SCOTT: Mr. Hollingworth
24 apparently is expected in at 4 o'clock or very
25 shortly thereafter.

26 THE COMMISSIONER: Well, let's
27 carry on then and when you have made your submission
28 we might just adjourn for a few moments and Mr.
29 Genest, as he just now offered to do, will call Mr.
30 Gibbs. They have a very close relationship apparently --

1 MR. GENEST: We are both
2 from the country.

3 MR. SCOTT: I was going to
4 say, what country, but I guess that is for Mr. Gibbs --
5 (LAUGHTER)

6 Mr. Commissioner, first a
7 word about the timetable to which Mr. Genest
8 referred. We have planned out among counsel
9 and staff, a timetable that will carry us throughout
10 the summer and into the autumn. Whether or not a
11 two week adjournment is requested and granted, I have
12 no doubt that that timetable can, if necessary, be
13 restructured, so that formal evidence is heard at
14 times that are reasonably convenient to my friend. I
15 would not want him to leave with the -- without being
16 certain that if an adjournment is granted, every
17 effort will be made to see that the formal evidence
18 as well as the community evidence is proceeded with
19 with dispatch. We did not intend with the exception of
20 a two week period to take any vacation this summer
21 and do not now intend to do so whether an adjournment --
22 if you please, sir, whether or not an adjournment
23 is granted.

24 I wish to say with some
25 reluctance, but I think that it is important nonetheless
26 to say it that I support this request that Mr.
27 Lucas has made. I think it reasonable to tell you
28 why. When this Inquiry was launched it was recognized
29 from the beginning that it must be open and it must
30 be full and complete and I think it was also

1 recognized by all participants that generally speaking,
2 while the public were welcome and were encouraged to
3 attend it was necessary in order that the work be
4 done fairly and completely that three major groups of
5 participants should be present, if possible, on a
6 continuing and regular basis.

7 The first of course is
8 Arctic Gas and they apparently have resolved their
9 funding problems and are present.

10 MR. GENEST: Don't think it's easy.

11 MR. SCOTT: The second group
12 of course is the people of the North and I speak of
13 all the peoples, the whites, the Indians and the
14 Inuit people. It is obviously important that they
15 should if possible be present at all stages of the
16 hearing to make an assessment for themselves of the
17 proposal, and the third group, not less important, in
18 my respectful judgment than the other two, are those
19 organizations and persons in Canada who represent
20 environmental concerns and for purposes of convenience
21 they formed themselves into a single entity in order
22 to put forward their views at this inquiry and to lend
23 assistance to the peoples in providing expertise in
24 the environmental area.

1 I agree with
2 Mr. Genest in the sense that whether one or other of
3 these groups is funded or is not funded is a matter for
4 the Government of Canada and over which the Government
5 of Canada has full responsibility, and I would not be
6 supporting this request if the question were simply
7 whether one of these organizations should be funded
8 by the Government of Canada or not. I think it
9 important to observe that from the beginning, however,
10 the environmental group operating through CARC has
11 been funded, was funded last fiscal year by the Govern-
12 ment of Canada, and I don't think it goes too far to
13 say that until very recently they had every reasonable
14 expectation to assume that there would be some margin
15 of funding available for them this year. It is now
16 clear at this stage at least, beyond doubt, that that
17 funding or funding of any kind for this fiscal year
18 is not available and therefore the question becomes
19 in my respectful view, not whether they should be
20 funded or not, but whether in these circumstances which
21 have reasonably suddenly come upon them, they should
22 be allowed an opportunity to re-assess their financial
23 situation, to re-assess their ability to participate
24 in the Inquiry, and in our respectful submission, they
25 should be allowed that opportunity.

26 Whether CARC is able to parti-
27 cipate further in the Inquiry, it will have to decide for
28 itself, and as Mr. Bayly and others have said, if they
29 are unable to participate in the manner in which they
30 anticipated, it will fall to others to attempt to do

1 the work that they proposed. It will fall in part
2 to Commission counsel, and as I said some weeks ago,
3 when asked about this, we will take upon that respon-
4 sibility if it should be necessary and will do our
5 best to lead before you all the appropriate environ-
6 mental evidence that is available.

7 I hasten to add, however,
8 that in the event it is necessary for us to do that,
9 it may be necessary for us to request additional time
10 in order to prepare for that eventuality. That isn't
11 a problem with which we have to deal, in my respectful
12 view, at the moment, but I think my friend should be
13 on notice that if the env_ironmental groups are not
14 in a position to participate, either through private
15 funding or government assistance, and we are expected
16 to take on that task at this date, it will require
17 a reasonable amount of time in order to permit us
18 effectively to do so.

19 So I respectfully submit, sir,
20 that in these circumstances it is appropriate to ser-
21 iously consider and grant the request that CARC has
22 made. CARC is the only en_vironmental organization
23 that has been before you on a full-time basis. My friend
24 refers to the Environmental Protection Board, an organ-
25 ization that has done good work, no doubt, and which
26 was substantially supported by the applicant, Canadian
27 Arctic Gas. It is, as I've noted before, it is
28 regrettable that they do not have funding that permits
29 them to be here on a regular basis, and we have made
30 efforts to make their task, as far as time-table is

1 concerned, a little easier.

2 But in their absence I
3 emphasize to you that there is no participant with the
4 possible exception of the applicant, that is able to
5 state the environmental case as fully and as thoroughly
6 as CARC and the Northern Assessment Group should be able
7 to do. It seems to me that in order to permit them to
8 re-assess their position, to re-group, to initiate
9 their campaign for support, an adjournment of this
10 type is not untoward.

11 That's all I have to say, sir.

12 THE COMMISSIONER: Excuse me,
13 is the coffee ready? Well, we'll hear from you in
14 reply, Mr. Lucas, if you wish to say anything in reply.

15 MR. LUCAS: Thank you, Mr.
16 Commissioner. I have only one thing to say in reply
17 to my friend, Mr. Genest, and that is he has made the
18 suggestion that during the previous phase, during the
19 previous session of the hearings ending on April 23rd,
20 all of the major participants were ready to go with
21 construction panel cross-examination. The fact is that
22 CARC was not ready to go at that time either, simply
23 because of the assignment of segments of the case as
24 between Mr. Anthony and myself, and therefore we had
25 made arrangements that, with Mr. Scott, that if our
26 turn came up prior to the close of proceedings on the
27 23rd, as it in fact did as far as the rota that had
28 been established is concerned, then the native
29 organizations would go ahead of us, and if necessary,
30 Mr. Scott would begin his cross-examination as well.

THE COMMISSIONER: Well, we'll take

(PROCEEDINGS RESUMED FOR FEW MOMENTS)

1 (PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

2 MR. GENEST: Mr. Commissioner,
3 first of all I tried to reach Mr. Gibbs but was inf-
4 ormed he was in Washington. I tried the hotel at which
5 he is allegedly staying, and they have not heard of
6 him.

7 (LAUGHTER)

8 So I was unable to --

9 THE COMMISSIONER: I think that's
10 something we may overlook.

11 MR. GENEST: He may not have
12 checked in. I am told by the Foothills representative
13 here, though, that they feel that their counsel should
14 have an opportunity of making submissions. I understand
15 that Mr. Hollingworth may be on the afternoon plane
16 which I understand gets here about 4:30, and perhaps
17 he may be given an opportunity at that time.

18 I wonder if I might be given
19 leave, sir, I don't want two kicks at the can, but I
20 had not anticipated that Mr. Scott would take the
21 position that he has.

22 I want to deal just in parti-
23 cular with one of the matters that he has raised, and
24 that is the grounds that he urged on you for supporting
25 the application of Mr. Lucas, that they should be
26 allowed an opportunity to re-assess.

27 Mr. Scott did not deal with
28 the question of the cross-examination of the construc-
29 tion panel on which I understand a considerable amount
30 of effort on the part of his staff has already taken

1 place and which it seems to me could be gone forward
2 with while these people are here, they having been
3 assembled from many parts of the country, without
4 being asked to come back again. It seems to me that we
5 could -- that Commission counsel could at least proceed
6 with that cross-examination.

7 I also, as far as Mr. Scott's
8 argument is concerned, I remind you, sir, that the
9 Inquiry on its present schedule will break on June
10 6th and that there will be seven weeks for community
11 hearings, which are devoted entirely to community hear-
12 ings which it seems to me would provide an ample and
13 admirable opportunity for parties who have to re-assess
14 their position to do so, especially CARC, who is not
15 taking an active role in the communities.

16 Thank you, sir.

17 THE COMMISSIONER: What do you say
18 about that, Mr. Scott? Mr. Genest says that you must
19 be ready now to cross-examine this panel, and why can't
20 we proceed and you go ahead and cross-examine them?

21 MR. SCOTT: Well, Mr. Commis-
22 sioner, I think we are reasonably prepared, and if
23 my cross-examination is typical, we may get the two
24 weeks that way, I suppose. It seems to me that at least
25 until a ruling is made on this matter that it would
26 respectfully be inappropriate for the Inquiry to pro-
27 ceed during the enforced absence of one of the major
28 continuing participants. Now if it is ruled that there
29 is to be no adjournment, and that leads someone to be
30 absent, or if someone is absent following that, well

1 then we're quite prepared to proceed, as I'm sure
2 other participants are. But it seems to me that it
3 would be respectfully wrong until this motion is ruled
4 on to conduct cross-examination.

5 With respect to June 9th, I'm
6 determined if this adjournment is granted, or whether
7 it's not, to utilize our time as effectively as
8 possible, and we will, if necessary, re-arrange our
9 schedule in order to do that so that all the time avail-
10 able in the summer is used either at the communities
11 or at the formal hearings.

12 THE COMMISSIONER: Mr. Lucas,
13 if you're granted this two-week adjournment, one thing
14 concerns me, Mr. Genest raised it, where will that
15 put us in two weeks' time? We may certainly be facing
16 then a proposal from CARC to re-organize the hearings,
17 depending on whether CARC has been able to put together
18 a funding program that is appropriate to the scale
19 of participation that it wishes to have in the hearings.
20 There may be a proposal by the native organizations
21 then, based on what CARC's own proposal is. Will we
22 likely -- and Mr. Scott has indicated that he may wish
23 further time -- if CARC's involvement is scaled down
24 at that stage he says he may wish further time so that
25 he, together with the Inquiry staff, may cover some of
26 the ground that CARC had intended to cover.

27 What I'm getting at is I know
28 that you have your problems, so that from the Inquiry's
29 point of view what are we likely to be faced with in
30 two weeks' time, assuming you were to get the

1 adjournment? Would you comment on that? I don't
2 suggest that you have to give me any hard and fast
3 answers because you don't know what scale of funding
4 you'll be able to count on until the two weeks have
5 passed, I supposed; but subject to that what can you say?

6 MR. LUCAS: Well, Mr. Commis-
7 sioner, what we want is to be able to continue as a
8 full-time participant in the Inquiry, a major parti-
9 cipant, so that we can have counsel here on a con-
10 tinuing basis, and to be able to represent in a complete
11 way one of the interest areas that Mr. Scott mentioned
12 earlier. Now, if we cannot do that then we will be
13 forced when the formal hearings re-convene, following
14 an adjournment, assuming it were granted, to scale
15 down our participation and it may be necessary at that
16 time, for example, to apply to the -- to you, sir, for
17 permission to put our evidence in in a block, or per-
18 haps in several blocks at times and places that are
19 easier on our limited resources, perhaps somewhat in
20 the manner that the Environment Protection Board
21 is proceeding at the moment.

22 But we want to continue as a
23 major participant and the time will be used in putting
24 our every effort into scaring up the resources neces-
25 sary to fulfill that role.

26 Now Mr. Genest suggested
27 earlier that what we're asking for may turn out to be
28 indefinite adjournment. That's just not the case. We're
29 just asking for a chance for a limited period in which
30 we either do or die as far as major participation on a

1 continuing basis in the Inquiry is concerned. It's a
2 risk, I guess, that we take and that the Inquiry takes,
3 in effect, if the adjournment were to be granted.

4 THE COMMISSIONER: Thank you,
5 Mr. Lucas. Well, yes, Mr. Scott?

6 MR. SCOTT: Might I suggest we
7 adjourn until 4:30 and perhaps Mr. Hollingworth will
8 be here by then, unless there is some other suggestion?

9 THE COMMISSIONER: Well --

10 MR. GENEST: I have some
11 matters, sir, that are in the nature of fulfilling
12 undertakings and giving information to the Inquiry,
13 and I can use the time now to put in to form the
14 subject of cross-examination later, whenever that
15 takes place. But in particular, sir, you asked Mr.
16 O'Rourke at the last session to provide additional
17 information on the sort of logistical impact to the
18 Yukon of shipments through Skagway and Whitehorse and
19 so on.

20 THE COMMISSIONER: Thank you,
21 Mr. Genest. I don't think that we'll do that. I'd
22 like to consider this motion of Mr. Lucas' in a way
23 that is uninterrupted by other evidence, and in any
24 event Foothills isn't here, either to participate in
25 the argument on the motion or to be present when the
26 evidence is adduced, and I think that I must take it,
27 notwithstanding -- well, I think I must take it it
28 is through no fault of Foothills that Mr. Hollingworth
29 isn't here. We won't go into the question of whose
30 fault --

1 MR. GENEST: The reservation
2 clerk.

3 THE COMMISSIONER: How do the
4 rest of you feel? Do you want to adjourn until 4:30
5 or do you want to leave Mr. Hollingworth's contribution
6 to this matter until nine o' clock in the morning?
7 I'm in your hands. Mr. Scott has suggested 4:30. If
8 no one objects to that, we'll simply adjourn until 4:30.
9 No one else appears to have any other pressing engage-
10 ments at 4:30 so we'll adjourn until 4:30 and I should
11 say that what I am considering is the question whether
12 there ought to be an adjournment. The matter of
13 funding for the environmental organizations is one that
14 is for the Government of Canada. They are the guardians
15 of the public purse. Reasons that may seem compelling
16 here in Yellowknife on the question of funding may not
17 seem compelling in Ottawa. At any rate, it is a matter
18 for those who govern the country to determine; but
19 I want to give the most serious consideration to this
20 motion because it is said that it is the means by
21 which Canadian Arctic Resources Committee and the
22 environmental organizations that are part of the whole
23 Northern Assessment Group, may be unable to participate
24 fully on a continuing basis, that is something that
25 I think is of real usefulness to the Inquiry.

26 But I want to make it clear
27 that that's what I'm considering, and all the things
28 that Mr. Lucas said about the Government of Canada are
29 matters on which every citizen is entitled to have an
30 opinion, but on which this Inquiry is in no position

1 to make any determination about.

2 So we'll adjourn until 4:30.

3 (PROCEEDINGS ADJOURNED TO 4:30 P.M.)
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1 (PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

2 THE COMMISSIONER: Mr. Holling-
3 worth?

4 MR. HOLLINGWORTH: Thank you,
5 Mr. Commissioner. First of all, Mr. Commissioner, may
6 I apologize for holding up the proceedings by my inab-
7 ility to be here earlier in the day. It was due to no
8 lack of effort on my part, in cajoling and cursing
9 at various P.W.A. officials, but without any luck, I'm
10 afraid, until I got on the 2:30 flight.

11 My understanding, sir, is
12 that Mr. Lucas has presented a motion for an adjourn-
13 ment for two weeks in the hope that he may be able to
14 obtain some funding for the Canadian Arctic Resources
15 Committee.

16 I further understand that
17 everyone except my friend, Mr. Genest, opposes that
18 motion -- rather supports that motion.

19 (LAUGHTER)

20 This has been too fast a day.

21 I am going to join, with some
22 hesitation and reluctance in joining Mr. Genest, in
23 opposing the motion as well for several reasons.

24 In the first place I under-
25 stand that two weeks isn't necessarily going to mean
26 anything as far as Canadian Arctic Resources Committee's
27 funding is concerned. They may or they may not have
28 at that time the funding necessary.

29 In the meantime I would sub-
30 mit that Mr. Scott and his assistants can ably present

1 the case that has hitherto been presented by CARC,
2 perhaps with a little less thoroughness, but never-
3 theless with enough to cover the situation for the
4 time being, and very definitely my opposition to the
5 motion is prefaced on the assertion by Mr. Genest that
6 if necessary, this panel and future panels, which I
7 assume would mean only the operations and maintenance
8 panel, would be brought back for cross-examination by
9 Canadian Arctic Resources Committee in the event that
10 CARC saw fit to cross-examine on the basis of what
11 they have read in the transcripts.

12 I am not asserting a strong
13 position one way or the other. It would be an incon-
14 venience to Foothills to have an adjournment, but it
15 wouldn't be a great burden to bear, but sitting back
16 and looking at the thing in as little time as I've
17 had, I can't see where any prejudice would be occasioned
18 by denying Mr. Lucas' motion in the event that CARC
19 has the right to call back these panels at a later time
20 for cross-examination.

21 That is all I have to submit
22 on that, Mr. Commissioner, and I apologize again for
23 not being here earlier in the day, and I thank you for
24 adjourning the hearing to enable Foothills to make its
25 presentation.

26 THE COMMISSIONER: Thank you,
27 Mr. Hollingsworth.

28 Could I ask you another
29 question, Mr. Lucas? Mr. Genest says, and Mr. Holling-
30 worth joins with him in saying, "Well, if you need two

1 weeks to assemble -- to re-assemble your whole funding
2 program, then why can't the Inquiry proceed and why
3 can't the cross-examination of this panel continue and
4 then the evidence of the next panel be called, and so
5 on, it being understood that CARC -- that you on behalf
6 of Canadian Arctic Resources Committee will have the
7 right to have any of the members of these panels recalled
8 at a time that is convenient so that you can ask the
9 questions you would have asked had you been in a posi-
10 tion to continue with your cross-examination today?"

11 Now that cannot in the nature
12 of things be as happy an arrangement from the Inquiry's
13 point of view as it would be for you to carry on
14 immediately; but what is your reply to that? Why would
15 not that arrangement be satisfactory?

1 MR. LUCAS: Well again, Mr.
2 Commissioner, I would like to emphasize that it is
3 our desire to be party to the Inquiry all the way
4 through if possible and I appreciate Mr. Genest's offer
5 to recall panels at a future date if that should be
6 necessary, but there is really a more fundamental
7 problem than that and that is we are not prepared at
8 the moment to go ahead with the cross-examination and
9 if other parties go ahead in our absence there are
10 two problems. First of all, the cross-examination
11 of at least one of the other parties depends in some
12 measure and I am referring to Mr. Bayly and
13 it depends in some measure on the assistance of the
14 Northern Assessment Group as well and secondly, I am
15 going to have to depart and start knocking on doors in
16 Ottawa and Toronto and writing little letters and so
17 on.

18 MR. GENEST: Do not forget
19 Calgary --
20 (LAUGHTER)

21 MR. LUCAS: We will be
22 working westward, Mr. Genest, I can assure you.

23 THE COMMISSIONER: I thought
24 you had been knocking on Ottawa's door --

25 MR. LUCAS: And with singular
26 lack of success.

27 So, there are two things in
28 other words, the cross-examination of at least one
29 of the other parties will be assisted by the Northern
30 Assessment Group and may be prejudiced to some extent, I

1 believe Mr. Bayly has already referred to this problem,
2 and the other problem is simply that we will be unable
3 to have counsel here during the continuation of the
4 cross-examination and, Mr. Commissioner, the construction
5 and operation and maintenance panels are very important
6 so far as we are concerned because a great deal of
7 the Northern Assessment Group research has been
8 directed toward the problem of insuring that adequate
9 environmental stipulations are developed and imposed on
10 the applicant and enforced in the field during the
11 actual construction and later on during the operation
12 of the pipeline and so the cross-examination at this
13 stage is very important as laying a basis for that
14 evidence that will be put in at a later stage of the
15 hearing if all goes well and for that reason, it is
16 important that we have counsel here during the
17 cross-examination of the other parties as well as
18 having counsel here to conduct cross-examination
19 on behalf of CARC, so in a nutshell I guess that is
20 the dilemma we face.

21 I am a little bit worried about
22 my airline ticket, to put it quite bluntly as matters
23 stand at the moment.

24 THE COMMISSIONER: I am sorry,
25 Mr. Hollingworth had problems with his reservation, your
26 problem is with the ticket, is that it --

27 MR. LUCAS: That is right,
28 it would have to be fly now, pay later, you see --

29 THE COMMISSIONER: Yes, well,
30 I see the -- I appreciate the force of the reply you

1 have made to Mr. Genest's point.

2 MR. LUCAS: And I might just add,
3 Mr. COMmissioner, that I had intended in reply to
4 Mr. Genest to also put our application again on the
5 principle of continued participation in a complete
6 way by one of the interests that it seems to us the
7 Inquiry has recognized as an important interest and
8 at one stage it appeared that the Government of
9 Canada had recognized it as an important interest too
10 and we regard that as an important principle, the
11 importance of what we have referred to as third
12 party involvement in the Inquiry from the environmental
13 perspective, so I want to emphasize that although I
14 must concede that Mr. Scott has already said it
15 perhaps better than I have.

16 THE COMMISSIONER: Well,
17 I think that this is a matter of real importance to
18 the future course of the Inquiry so I will consider
19 the matter over night.

20 MR. SCOTT: Mr. Commissioner,
21 could I suggest that we should meet at one o'clock
22 tomorrow.

23 THE COMMISSIONER: All right,
24 we will adjourn until one o'clock tomorrow then .

25 (PROCEEDINGS ADJOURNED TO MAY 13, 1975.)
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Vol. XXXVI

AUTHOR

Mackenzie Valley pipeline inquiry:

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MACKENZIE VALLEY PIPELINE INQUIRY

IN THE MATTER OF AN APPLICATION BY CANADIAN ARCTIC GAS
PIPELINE LIMITED FOR A RIGHT-OF-WAY THAT MIGHT BE GRANTED
ACROSS CROWN LANDS WITHIN THE YUKON TERRITORY AND THE
NORTHWEST TERRITORIES FOR THE PURPOSE OF THE PROPOSED
MACKENZIE VALLEY PIPELINE

and

IN THE MATTER OF THE SOCIAL, ENVIRONMENTAL AND ECONOMIC
IMPACT REGIONALLY OF THE CONSTRUCTION, OPERATION AND
SUBSEQUENT ABANDONMENT OF THE ABOVE PROPOSED PIPELINE

(Before the Honourable Mr. Justice Berger, Commissioner)

Yellowknife, N.W.T.

May 13, 1975.

PROCEEDINGS AT INQUIRY

VOLUME XXXVII

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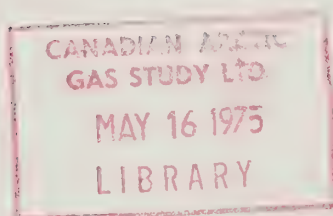
Volume XXX (April 15/75):

- p.3748 Line 3 - "micromagnetic" should be "electromagnetic"
Line 6 - after "that" insert "is used by"
Line 10 - after "standard" insert "bandwidth"
- p.3752 Line 17 - "air" should be "earth"
- p.3754 Line 21 - "length" should be "link"
Line 26 - "air" should be "earth"

Volume XXXII (April 18/75):

- p.4129 Line 17 - "McCabe Theo" should be "McCabe-Thiel"
- p.4135 Line 16 - "sulphur total standard" should be "sulphur per 100 standard"
Line 18 - "stock in" should be "stack and"
- p.4145 Line 6 - "justify" should be "testify"

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11835
Vol XLVII



1 APPEARANCES:

2 Mr. Ian G. Scott, Q.C.
3 Mr. Stephen T. Goudge,
4 Mr. Alick Ryder and
5 Mr. Ian Roland for Mackenzie Valley
6 Pipeline Inquiry
7
8 Mr. Pierre Genest, Q.C.
9 Mr. Jack Marshall,
10 Mr. Darryl Carter, and
11 Mr. John Steeves for Canadian Arctic Gas
12 Pipeline Limited
13
14 Mr. Reginald Gibbs, Q.C.
15 Mr. Alan Hollingworth for Foothills Pipe Lines
16 Ltd
17
18 Mr. Russell Anthony,
19 Prof Alastair Lucas for Canadian Arctic
20 Resources Committee
21
22 Mr. Glen W. Bell and
23 Mr. Gerry Sutton for Northwest Territories
24 Indian Brotherhood and
25 Metis Association of the
26 Northwest Territories
27
28 Mr. John U. Bayly for Inuit Tapirisat of
29 Canada and the Committee
30 for Original Peoples'
31 Entitlement
32
33 Mr. Ron Veale and
34 Mr. Allen Lueck for Council for Yukon
35 Indians
36
37 Mr. Carson H. Templeton for Environment
38 Protection Board
39
40 Mr. David Reesor for Northwest Territories
41 Association of
42 Municipalities
43
44 Mr. Murray Sigler for Northwest Territories
45 Chamber of Commerce
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I N D E X

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WITNESSES FOR APPLICANT:

Philip Harvey DAU	
John Richard O'ROURKE	
Guy Leslie WILLIAMS	
-In Chief (continued)	4705
- Cross-Examination by Mr. Bell (Cont'd)	4723
- Cross-Examination by Mr. Bayly	4737

EXHIBITS:

118 Activity Schedule & Manpower for Construction of Spread A (vicinity of Old Crow)	4706
119 Erata in Submissions of CAGPL	4707

1 Yellowknife, N.W.T.

2 May 13, 1975.

3 (PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

4 MR. SCOTT: Yesterday Mr.

5 Lucas made his motion for an adjournment and gave his
6 argument in support of it, and filed with it a state-
7 ment; in the result I joined in the relief that he
8 requested. It has been asserted that by doing so I
9 joined in the observations that were contained in his
10 written statement which has been filed with the Inquiry.

11 I have now had an opportunity
12 to read that written statement and I am unable to sub-
13 scribe to large parts of it, much of which, it strikes
14 me, are expressed in language more suitable for a
15 political arena than to a judicial Inquiry, and I
16 thought I should make it clear that I don't accept a
17 number of the statements he has made in that statement.
18 In particular, I am unable to accept the four observa-
19 tions that he makes in numbered paragraphs on page 2;
20 as is clear, the Inquiry has established machinery to
21 achieve full production of documents, discovery of
22 material, and attendance of witnesses. In my judgment
23 for what it is worth, those procedures have been
24 working reasonably well and the Northern Assessment
25 Group, together with other participants, can utilize
26 them, and I'm sure if they do, will find that they
27 work in all the circumstances fairly satisfactorily.

28 I wanted to make my position
29 with respect to that written filed statement clear.

30 Yesterday, as I've said, Mr.

1 Lucas asked for an adjournment of the Inquiry for a
2 period of two weeks. His request, orally made, was made
3 he said, because the Government of Canada had not been
4 able to provide funding for the Northern Assessment
5 Group in 1975.

6 Last year the Department
7 authorized the Inquiry to advance funds to the Northern
8 Assessment Group for the development of environmental
9 research and analysis in the amount of \$200,000. The
10 Inquiry was advised in February, 1975, by the Depart-
11 ment that it did not wish in 1975 to support environ-
12 mental organizations through the Inquiry operating
13 budget. As a consequence, the Inquiry has so far had
14 no funds to continue funding the Northern Assessment
15 Group this year.

16 As we said yesterday, the
17 Inquiry has from the beginning been conscious of the
18 important contribution that the Northern Assessment
19 Group is capable of making to the work we are doing.
20 The Inquiry has had now an opportunity to go over its
21 budget with officials of the Department of Indian
22 Affairs & Northern Development. As a result the Depart-
23 ment is in a position to assume the burden of certain
24 Inquiry operating budget items which can fairly be
25 assumed by the Department. I refer, for example, to
26 costs associated with Federal Civil Servants succumbed
27 to the Inquiry, the costs of transcripts provided to
28 Government Departments and agencies, and other like
29 matters.

30 As a result of this exercise,

1 the Inquiry will have an unallocated sum of approxi-
2 mately \$100,000 available, which the Inquiry has the
3 authority to advance to the Northern Assessment Group
4 on the same terms and conditions and in the same way
5 and for the same purposes as funds were advanced to
6 the Northern Assessment Group last year.

7 The Department is prepared to
8 modify its memorandum of February, 1975 to the Inquiry
9 so that this can occur. As I said yesterday, I do not
10 intend to comment on the government's decision not to
11 directly fund environmental research in 1975. That
12 decision is a policy one for which they alone have
13 responsibility. I do wish to say and emphasize, however,
14 that I am extremely grateful for the Minister of Indian
15 Affairs & Northern Development and to the officials of
16 his Department for their co-operation with us today to
17 facilitate a full, fair, and complete Inquiry.

18 I presume, in view of those
19 observations that my friend does not wish to proceed
20 with his motion.

21 MR. LUCAS: Mr. Commissioner,
22 since the reason for the adjournment motions seems to
23 have been removed, the substance falls, and the motion
24 is therefore withdrawn.

25 I would add, however, that
26 part of the reason for the adjournment remains, namely,
27 some difficulties that I may have in carrying out a
28 cross-examination of panel 4, if I'm required to begin
29 today. I can undertake, if necessary, to proceed as
30 best I can for a relatively short period. We have

1 contacted our construction advisor, Mr. Skinnarland
2 and he has advised us that he will be able to get to
3 Yellowknife by tomorrow evening. So I may be obliged,
4 Mr. Commissioner, to ask permission to split my cross-
5 examination and perhaps even if necessary, address some
6 questions to the construction panel following Mr
7 Scott's cross-examination, and these will be questions
8 for which the advice of Mr. Skinnarland is specifically
9 required.

10 MR. SCOTT: Mr. Commissioner,
11 I suggest that what we might do is Mr. Lucas might
12 proceed in accordance with the roster we have established
13 and when he runs into difficulties, if he will let us
14 know we can then attempt to resolve those problems as
15 they arise.

16 MR. LUCAS: Yes, that would be
17 satisfactory.

18 MR. GENEST: I understand Mr.
19 Bell still has some questions.

20 MR. BELL: Yes, I still have
21 some questions.

22 MR. GENEST: I thought it
23 might be useful if before further cross-examination
24 proceeded if I caught up with some undertakings.

25 THE COMMISSIONER: Well, before
26 you do that, I --

27 MR. GENEST: I've been trying
28 for two days, and will keep on doing so.

29 THE COMMISSIONER: It becomes
30 unnecessary for me to determine -- make any determination

1 of what should be done about the motion by Mr. Lucas,
2 but I think I should thank you, Mr. Scott, for your
3 good offices in arranging for the funding to be pro-
4 vided -- additional funding to be provided to the
5 native organizations and the funding that you've just
6 now announced to be provided to the Northern Assess-
7 ment Group. This means that we can carry on now and
8 despite the controversy about the funding, I think we
9 should remember that men of good will can have differ-
10 ent opinions about the extent to which the participa-
11 tion of the native organizations and the environmental
12 groups ought to be supported by the public purse. As
13 I said yesterday, reasons that may seem compelling in
14 Yellowknife may not always seem compelling in Ottawa.

1 Well, I think that we are now back to where we were two
2 weeks ago.

3 MR. GENEST: Shall I call the
4 panel, sir?

5 THE COMMISSIONER: Yes, please
6 do.

7 MR. GENEST: Could I call the wit-
8 nesses to their stand.

9 PHILIP HARVEY DAU,
10 JOHN RICHARD O'ROURKE
11 GUY LESLIE WILLIAMS, resumed.

12 MR. Hollingworth: Mr. Commissioner,
13 perhaps before the business of this panel continues this
14 would be an opportune time for me to make mention of the
15 fact that during the last panel, the design panel, Mr.
16 Gibbs was cross-examining the panel and used a document
17 referred to as the meeting of the metalurgical sub-
18 committee at Calgary, Alberta, in April of 1973. He
19 promised at that time to file the report. I have
20 distributed copies to my friends and to Miss Hutchinson
21 and I would like to file this as an exhibit to the
22 Inquiry, Mr. Commissioner.

23 THE COMMISSIONER: All right,
24 it will be marked.

25 MR. GENEST: Sir, I have four mat-
26 ters to deal with today. One is a long standing promise
27 to you, sir, to deal with the matter of the input into
28 the decision making relating to the Fort Simpson alternative
29 route that we have filed. The next is of more recent
30 vintage and that is in a response to a request by you
with reference to the provision of information as to the

1 impact upon the Yukon of shipments through Skagway and
2 Whitehorse and on to the northern part of the Yukon,
3 the Dempster Highway, in the event that the interior
4 route was selected and I have Mr. Williams and Mr.
5 O'Rourke ready to provide that information if it is
6 convenient to be provided now, I thought that this
7 would be the time I was supposed to give opportunities
8 to cross-examine if they should arise.

9
10 I also have, sir, a set of
11 activity schedules and manpower requirements for
12 construction spreads. We were asked, if you will recall,
13 during the last session to take some typical spreads and
14 I have a set of spreads showing the activity schedules
15 and manpower for construction spreads A, for the third
16 winter, construction spread E for the third winter,
17 construction spread G for the third winter and construction
18 spread E for the second winter. --And perhaps I might file
19 these sheets now, Mr. Dau or Williams will have one
20 or two remarks to make about them. Can we hand the
21 copy to the secretary -- I have passed, I think, a number
22 of them around to my learned friends and I do not know
23 if there is one on your desk, sir.

24 THE COMMISSIONER: Thanks.

25 MR. GENEST: Perhaps these could
26 be marked, sir.

27 THE COMMISSIONER: Yes,
28 certainly.

29 (ACTIVITY SCHEDULE AND MANPOWER FOR CONSTRUCTION SPREAD
30 "A" (VICINITY OF OLD CROW) MARKED AS EXHIBIT 118)

MR. GENEST: And I have also, Mr. Commissioner, what we call an up to date errata sheet which are a collection of corrections of mistakes sometimes in numbers that have been found scattered through the application, that I would like to file. I hope that there will be an end to these, but as all our experience shows you can read a paragraph five times and the sixth time you realize that there was an error.

Now, I wonder if I could file these errata as the next exhibit.

THE COMMISSIONER: Yes.
(ERRATA IN SUBMISSIONS OF CAGPL MARKED AS EXHIBIT 119)

MR. GENEST: And these have been distributed, sir. -- And then I wonder if I then might ask Mr. Simpson to talk -- to talk about Fort Williams I was going to say -- Mr. Williams to talk about Fort Simpson, and perhaps to understand the information that we are providing I ought to refer, sir, to the question that gave rise to this which appeared at page 2723 of the transcript when Dr. Clark was on the stand and it might be useful if I just read that back into the record to refresh all our memories.

At page 2723, you, sir, addressed these remarks to Dr. Clark and I am quoting,

" I take it at the moment you are not really able to give me any specific instances where the route was moved owing to the necessity of avoiding an environmentally sensitive

1 area.

2 A I can think of a couple of examples and
3 they have already been discussed, of pretty
4 large movements, but the alignment sheet
5 work, for instance, the give and take, I
6 cannot recall those from memory, I can
7 cannot recall it happening and I can under-
8 take to look at records that are available."

8 And then you, sir, said:

9 "Q Yes, I think I would appreciate if you
10 would because you and your colleagues
11 will be back again in April."

12 And then you said, this, sir, and this is in particular
13 reference to Fort Simpson:

14 "Q Just going back a sentence or two, you said,
15 'Terrain is one of many considerations
16 that goes into selecting the route.'
17 Now, when the change in the route east of
18 Fort Simpson over a distance of 297 miles
19 was decided upon, terrain certainly was
20 one of the things that was considered
21 because you told me that Dr. Mollard's
22 aerial photographs were considered. What
23 is not clear to me yet, and I am raising it
24 now so that Mr. Genest will be aware of
25 it so that you and your colleagues will be
26 aware of it, what is not clear to me yet
27 is whether any other consideration besides
28 terrain went into the selection of that
29 route on the east side of the river...."

30 And Dr. Clark then went on to say that he was not really

familiar and we undertook to provide you with the
 information. That, sir, is scattered throughout the
 -- some of the exhibits and some of the previous
 testimony and I have asked Mr. Williams to give a
 recap of that whole subject so that you might find
 it at one place in the record. Would you proceed,
 please, Mr. Williams.

Dau, O'Rourke, Williams
In Chief

1 WITNESS WILLIAMS: The question
2 of the routing east of Fort Simpson and the reasons for
3 amending the filing are dealt with in three documents
4 before this Inquiry. The volume in support of the
5 amendment which I think is Exhibit 66, among other
6 things outlines the advantages of the revised routing.

7 Firstly, it eliminates the Liard River crossing;

8 Secondly, it requires a crossing of the Mackenzie
9 -- a smaller crossing east of Fort Simpson because it
10 is about the confluence of the Liard River; and the
11 routing is closer to the major staging area in the
12 Hay River- Enterprise area, and thus provides a lesser
13 quantity of truck mile hauls for the material that
14 will be hauled there south of the Mackenzie River, and
15 in response to the Pipeline Assessment Group No. 15,
16 and reiterated in Mr. Dau's written testimony of
17 March 11th, 1975, in testimony pages 1724 to 1727,
18 it was stated that before making the original filing
19 routes both east and west of Fort Simpson were studied.

20 The route west of Fort Simpson
21 was selected because it was shorter and it crossed less
22 muskeg terrain. These two factors resulted in a less
23 expensive cost at that time even when weighed against
24 the additional crossing of the Liard River and the
25 larger crossing of the Mackenzie west of Fort Simpson.

26 These two documents further
27 stated that when the decision was made to dual or
28 twin the pipeline at certain critical river crossings,
29 the new cost analysis indicated that the economics had
30 changed and a cost saving could be made by routing the

Dau, O'Rourke, Williams
In Chief

1 line east of Fort Simpson.

2 Now Mr. Commissioner, there is
3 really not much that can be added to those statements
4 except that to say in late 1973 we retained the services
5 of a pipeline contractor who specializes in the con-
6 struction of major river crossings. That company is
7 Pentzien Incorporated, and that's spelled P-E-N-T-Z-I-E-N
8 and we provided Pentzien with copies of the detailed
9 drawings of the six major river crossings, along with
10 our construction plans and we asked Pentzien to comment
11 on our construction plans and to provide us with their
12 cost estimates for these six major river crossings.

13 That Pentzien report was re-
14 ceived in February, 1974, and it is included in an
15 N.E.S. report entitled:

16 "Dual River Crossings,"
17 and the cost estimates provided by Pentzien were
18 considerably in excess of those estimates made by
19 Northern Engineering. The detailed study of the dual
20 river crossings by N.E.S. began in April, 1974, and
21 it resulted in that Dual Crossing Report dated July,
22 1974, and this report recommended that dual crossings
23 be installed at the three Mackenzie crossings, and the
24 Peel River.

25 So it was really a combination
26 of the dual river crossing recommendation, the higher
27 river crossing cost estimates, the fact that the rout-
28 ing west -- east, I'm sorry, east of Simpson eliminates
29 the Liard crossing, and it is closer to the Hay River-
30 Enterprise area, that shifted the economic benefits

Dau, O'Rourke, Williams
In Chief

1 in favor of the east of Simpson routing, even though
2 it is slightly longer and crosses more muskeg terrain.

3 In addition, of course, our
4 environmental consultants did not indicate any signi-
5 ficant difference in their opinion between the two
6 routes. The results of these studies by N.E.S. were
7 given to Canadian Arctic Gas in the fall of 1974 and
8 shortly thereafter a decision was made to amend the
9 filing.

10 MR. GENEST:

11 I might add to that,
12 sir, when this evidence will come in the form of
13 evidence, at a later stage, that I am instructed by
14 Arctic Gas that their socio-economic consultants were
15 asked to comment on the proposed Fort Simpson route
16 change, and that the judgments of those consultants at
17 that time was that the route change had very little
18 bearing in terms of the social and economic impact on
19 Fort Simpson. That was their judgment and it was sought.

20 In the judgment of Arctic
21 Gas also, they took a look at the economics of -- or
22 the impact that this would have on the economics of
23 bringing gas to Fort Simpson, and it was -- the
24 judgment was arrived at that it marginally improved,
25 not very much but it marginally improved the economics
26 of bringing gas to Fort Simpson. That, of course, will
27 be testified to later, but I thought that would give
28 you at least a picture as we see it of the history of
29 the Fort Simpson route change, and the inputs that
30 went into it.

THE COMMISSIONER: Thank you.

Dau, O'Rourke, Williams
In Chief

1 MR. GENEST: Next I have -- and
2 I think we've distributed this -- Mr. O'Rourke has a
3 prepared statement which I have passed to my friends
4 and I placed a copy in front of you with reference to
5 the questions raised by you, sir, relating to the Yukon
6 Territory, and I thought it would be wise to provide
7 the parties with a written statement and my suggestion,
8 sir, is that it should be read into the record, if
9 that meets with your approval.

10 THE COMMISSIONER: Yes.

11 MR. GENEST: Or else marked.

12 THE COMMISSIONER: No, I
13 think he could read it.

14 MR. GENEST: Right.

15 Q If you could then proceed,
16 Mr. O'Rourke,

17 WITNESS O'ROURKE: At the
18 proceedings at the Inquiry in Yellowknife on Wednesday,
19 April 23, 1975, you requested, Mr. Commissioner, that
20 we be prepared on resumption of the Inquiry in Yellow-
21 knife on May 12, 1975, to expand on the alternatives
22 available for delivering pipeline materials to certain
23 points along the prime or coastal and alternate or
24 interior routes in the Yukon Territory. You requested
25 this be done so that residents of the Yukon Territory
26 might better understand the possible impacts which could
27 be experienced by them as a result of Arctic Gas
28 eventually constructing the pipeline along one of the
29 two routes. This presentation is in response to
30 that request. It concentrates on the Yukon portion of

Dau, O'Rourke, Williams
In Chief

1 Prudhoe Bay supply line and is divided into two
2 parts:

3 (a) Material routing to serve the prime or coastal
4 route, and

5 (b) Material routing to serve the alternate or interior
6 route.

7 No attempt is made in this
8 material to accurately specify the source of pipeline
9 materials, foreign versus domestic, which could prevail
10 at the time of pipeline construction and which could
11 influence the selections of material routing.

12 Concerning the prime or
13 coastal route, the filed construction plan states in
14 part -- and I refer to Section 13.a.3.4, page 17, and
15 in reference to the Canadian portion of the Prudhoe
16 Bay supply line, that:

17 "All material will be moved by rail to the Hay
18 River- Enterprise staging area and then by Mac-
19 kenzie River barge to construction stockpiles."

20 In addition to this routing, there is also the option
21 of delivering pipe and other materials via the Bering
22 Sea route to points along the Arctic coast, i.e.
23 Komakuk Beach and Shingle Point, as well as to points
24 in the Mackenzie Delta, using ocean service in combina-
25 tion with Mackenzie River barging service.
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Dau, O'Rourke, Williams
In Chief

Regardless of which alternative is finally chosen, the impact on the Yukon Territory will be minimal. There could be opportunities for trucking services in the shore to stockpile movements of materials, and there could be employment opportunities at the stockpile site itself, during both inbound (summer) and outbound (winter) material movements.

As for the alternate or interior route, you will recall that in our previous appearance there was a difference between the logistics plan contained in the filed material and that arrived at in the CN/CP study. Mr. Marshall clarified the situation in his opening remarks on April 23, 1975 -- and I refer you to page 4543 of the transcript -- and we repeat a portion of his remarks:

"Mr. O'Rourke was questioned as to the movement of pipe for the interior route in Canada, and indicated that based on his studies, it would be more economical to ship the pipe through to Hay River, and then to Arctic Red River by barge, and from there by truck to the stockpile sites.

On checking with the logistics personnel at Northern Engineering, Mr. O'Rourke has found that the plan as filed in March of 1974, which was prior to the date of completion of the third volume of the CN/CP logistics report which deals with the interior route, did contemplate some movement of pipe for the interior route in Canada through Skagway-Whitehorse."

Dau, O'Rourke, Williams
In Chief

1 Our comments today have been
2 prepared with principle regard to the filed material,
3 but we also offer comments regarding the CN/CP pre-
4 ferred plan.

5 It is possible for pipe to
6 arrive at Skagway by ship,
7 (a) from foreign sources,
8 (b) from Welland, via the Panama Canal route, or
9 (c) from Vancouver, after having first been transported
10 across Canada by rail.

11 THE COMMISSIONER: Excuse me.
12 From Welland? From Welland via the Panama Canal, and
13 then north along the Pacific Coast?

14 A Yes sir.

15 Q Oh, I see, it would
16 come from the interior -- it would come from Hamilton,
17 is that what you're --

18 A I'm not very good on
19 my Ontario geography.

20 MR. GENEST: Welland is pretty
21 close to Hamilton.

22 A I see.

23 Q It's on Lake Erie, it's
24 where the pipe mill is located. It's about 30 miles
25 from Hamilton.

26 A The filed plan, and I
27 refer to Exhibit 14.e.1.2, provides for the movement
28 of 138 miles of pipe, some originating at foreign
29 mills through the Skagway-Whitehorse-Dempster Highway
30 route, to construct the Yukon portion of the pipeline.

Dau, O'Rourke, Williams
In Chief

1 Other materials would be transported to the stockpile
2 sites via this route as well as via the Mackenzie
3 Valley system.

4 Pipe would commence moving
5 through Skagway in mid-1978 -- and this date ties to
6 the filed amended schedule -- and continue at a con-
7 stant rate until all the 138 miles or 133,000 tons
8 had been received late in 1979.

9 Q Again here, to clear
10 up our situation on schedules, that's the filed
11 amended schedule and the latest figure is given by
12 Mr. Dau in his testimony in chief has put that forward
13 a year, between '79 and '80, is that correct?

14 THE COMMISSIONER: Put it back a
year.

15 A I honestly
16 don't know how Mr. Dau's dates would affect this
portion of the overall schedule.

17 WITNESS DAU: Add one year.
18 MR. GENEST: Add one year.

19 WITNESS O'ROURKE:
20 From Skagway, the pipe would
21 then move by rail to Whitehorse, at which point it
22 would pass through an inter-modal transfer and storage
23 site. The site would be equipped with cranes, fork-
24 lifts, and suitable materials handling equipment re-
25 quired to progress other materials through this point.
26 Approximately 25 persons would be needed to operate the
27 site, exclusive of highway truck drivers and other sub-
contracting personnel.

28 Pipe and other materials would
29 be moved from Whitehorse by highway on a year-round
30 basis to an intermediate stockpile site at Milepost 258

Dau, O'Rourke, Williams
In Chief

1 on the Dempster Highway. At this point, pipe which
2 was previously transported in 40-foot lengths, would
3 be double-jointed into 80-foot lengths and stockpiled
4 along with other materials, to be subsequently forwarded
5 over snow roads to final stockpiles or direct usage
6 along the pipeline right-of-way. The site at Milepost
7 258 on the Dempster would be suitably equipped with
8 materials handling equipment, and would employ approxi-
9 mately 25 persons, exclusive of highway truck drivers
10 and other sub-contracting personnel.

11 The Whitehorse to 258 trucking
12 operation would be sized to handle about 15 loads per
13 day in 1977 and 22 loads per day in 1978. There would
14 be a requirement for about 75 drivers, supervisors,
15 etc.

16 During the winter of 1978-79,
17 25 miles of pipe would be delivered over a snow road
18 from Milepost 258 on the Dempster to Milepost 335 on
19 the pipeline, which is approximately 7 miles north-east
20 of Old Crow, and 25 miles of pipe would be delivered
21 over a snow road from Milepost 258 on the Dempster
22 to station IA-09 via Milepost 417 on the pipeline,
23 that point being about seven miles east of Lapierre
24 House. During the winter of 1979-80, 34 miles of pipe
25 would be hauled from 258 on the Dempster for direct
26 stringing on the pipeline right-of-way north of Old
27 Crow in spread A, and 54 miles of pipe would be hauled
28 from Milepost 258 for direct stringing on the right-
29 of-way along the remainder of the distance to the
30 Yukon-Northwest Territories border, where spreads B and C

Dau, O'Rourke, Williams
In Chief

1 would be working. About 7,000 tons of other materials
2 required in the construction of the line from the
3 Alaska-Yukon border to the Yukon-Northwest Territories
4 border would be transported in the winter of '78-'79
5 from Milepost 258 over the snow roads to final stock-
6 pile sites; the balance of other materials, about
7 70,000 tons, being transported to these sites or to
8 points of use along the right-of-way in the winter of
9 '79-'80.

10 Contractors camps and equipment
11 required in the construction of the pipeline on the
12 interior route through the Yukon would originate at
13 points in the Mackenzie Valley. They would be
14 brought into the Yukon in the summer and fall of 1979,
15 via combinations of moves involving the river barging
16 system and the northern portion of the Dempster Highway.
17 Approximately 20 drivers and supervisors could be re-
18 quired for this service.

19 The CN/CP plan for supplying
20 materials to the interior route also assumes that the
21 pipe required for construction of the Canadian portion
22 of the Prudhoe Bay supply line would originate at both
23 domestic and foreign mills, but that it, the pipe and
24 all other materials, would route through Edmonton,
25 Hay River. The plan envisages a major barge to truck
26 transfer operation at a point in the vicinity of Arctic
27 Red River, followed by immediate deliveries to an
28 intermediate stockpile at Milepost 286 on the Dempster
29 Highway to a stockpile at Milepost 448 on the pipeline
30 right-of-way, and to a stockpile near RMP-950 on the

Dau, O'Rourke, Williams
In Chief

1 Peel River north of Fort McPherson.

2 The duration of the transfer
3 operation would be governed by the length of the barging
4 season.
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Dau, O'Rourke, Williams
In Chief

Materials would be routed through the Arctic Red River transfer point at a rate equivalent to about fifty truckloads per day in the summer of 1978 and to 70 truckloads per day in the summer of 1979 and again I am referring to the amended schedule. Personnel required for the transfer trucking operation would be approximately fifty persons in 1978 and 60 persons in 1979. Operations and personnel involved beyond the intermediate site at milepost 286 on the Dempster Highway would be similar to those described in the filed plan.

In summary, construction of the pipeline system through the Yukon Territory could lead to the following general impacts.

MR. GENEST: You refer there to the interior route?

A I am going to cover both, Mr. Genest.

MR. GENEST: --cover both, right -- go ahead.

A If constructed on the prime or coastal route; stockpile sites would be established at Komakuk and Shingle Point, - summer stockpiling activities could require approximately 50 persons at each site.

If constructed on the alternate or interior route, and logistics followed the filed plan: - intermediate stockpile sites would be established at Whitehorse and Milepost 258 on the Dempster Highway, approximately 25 persons would be employed at each site

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In Chief

1 from mid-1978 to late 1979.

2 - Final stockpile sites would be established at mile post
3 335 and station TA-04 on the pipeline right-of-way and
4 approximately 25 persons would be employed at each site
5 during the winters of 1978/ 79 and 1979/80.

6 -The Whitehorse to M.P. 258 highway hauling operation
7 extending from mid-1978 to late 1979 would require peak
8 employment running at approximately 75 persons.

9 -The hauling operation from M.P. 258 to the right-of-
10 way stockpiles during the winters of 78/79 and 79/80
11 would require employment of logistics personnel ex-
12 cluding truck drivers and others working for the
13 contractors and stringing activity, of approximately
14 150 persons.

15 If the pipeline was constructed
16 on the alternate or interior route and logistics followed
17 the CN/CP plan:

18 - a barge to truck transfer operation would have to
19 be established near Arctic Red River and a delivery
20 system to three points westward along the Dempster
21 Highway requiring from 50 to 60 persons to operate it.

22 -There would be an intermediate stockpile site at
23 M.P. 286 from the Dempster Highway requiring approximately
24 25 persons to operate it during summer receiving and
25 winter forwarding activities.

26 - And the hauling operation from M.P. 268 to the right-
27 of-way stockpiles during the winters of 78/79 and
28 79/80 would have employment at about 150 persons each
29 season.

30 Lastly, we repeat, that final

1 negotiations with
2 material routing will result from/all of the carriers
3 concerned in both principal routing alternatives with
4 tariffs, equipment and service reliability all being
5 taken into account and the routing selections will
6 be designed to be compatible with/the materials purchasing
7 plan, i.e. reflecting origins, volumes, timing, etc.

8 MR. GENEST: That concludes
9 what I have to offer today, sir.

10 CROSS-EXAMINATION BY MR. BELL (CONTINUED):

11 Q Mr. Commissioner, before
12 I resume cross-examination I would just like to say
13 that we are gratified to learn that the Northern Assess-
14 ment Group has received assurances of further funding
15 and we certainly would like to express our appreciation
16 to the efforts of Commission Counsel in securing these
17 assurances. This means for us that we will now
18 be able to assess our position more conclusively in
19 the light of recent developments and I hope to be
20 able to report to the Inquiry on that assessment in
21 the very near future. I for one am certainly glad
22 to get back to the normal business of the Inquiry.

23 Well, then, in spite of all
24 the hectic activity of the last two weeks, I did manage
25 to think up a few more questions which I would like
26 to put to this panel. The applicant states that
27 increased barge traffic generated by the pipeline will
28 not require improvement of the Mackenzie River channel.
29 In other words, it will not be necessary to dredge
30 the bottom of the river and I would like to know whether
Northern Engineering Services made any recommendations

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 to Arctic Gas concerning the necessity of dredging the
2 Mackenzie? Mr. Dau, can you answer that for me ?

3 WITNESS DAU:

4 A No, we did not.

5 Q Did they make any recom-
6 mendations to Arctic Gas concerning the desirability
7 of dredging the Mackenzie?

8 A No, I am sure that we
9 did not.

10 Q Do you know if Arctic
11 Gas conducted any studies to determine whether or
12 not it would be necessary or desirable to engage in
13 dredging?

14 A I am not aware of any
15 studies.

16 Q So you cannot tell me
17 upon what basis the applicant makes that statement?

18 WITNESS O'ROURKE:

19 A I think its is a case
20 of us putting our plan together assuming that the
21 government would not proceed with dredging. We laid
22 out a plan -- we knew that the operators, or the
23 principal operator was trying to get the federal
24 government to do a dredging program. There was
25 nothing --

26 Q By the principal operator
27 I assume you mean Northern Transportation Company?

28 A Northern Transportation,
29 yes.

30 There was nothing in sight by

1 way of feeling of confidence that the government would
2 proceed with that dredging in time to be of any
3 use for the pipeline project, so we identified our
4 barging requirements based on the premises that there
5 would be no dredging completed for the project.

6 Q I see, I take it then
7 that you had some discussions with Northern Transportation
8 Company or the Government concerning the possibility
9 of dredging?

10 A Any discussions I had
11 concerning the dredging were with Northern Transportation.

12 Q And you came to the
13 conclusion as a result of them that it would not
14 be wise to rely on the possibility of dredging the
15 Mackenzie?

16 A Yes, sir.

17 MR. GENEST: Dredging is
18 a touchy subject these days.

19 MR. BELL:

20 Q Would it not be desirable
21 from the point of view of safety to have the river
22 channel improved at least in some selected areas? I
23 was thinking here of shallow rapid areas, areas
24 where re-laying is required.

25 A I do not think that
26 we thought of it from that point of view. We recognize
27 that the operators are working on the river under
28 the present circumstances and we accepted those,
29 built our plans based on that present method of
30 operation.

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 Q Well, I would like to
2 put it to you that the risk of an accident in these
3 dangerous areas is bound to increase once the expanded
4 barge system is in operation and that would be for a
5 combination of reasons. In the first place you have
6 more movement on the river and more equipment which
7 had to be moved --

8 MR. GENEST: Mr. Commissioner,
9 I am going to interrupt Mr. Bell, because there is
10 a whole series of assumptions built into a question
11 of that kind which is impossible to answer of a piece.
12 I think that he has got to break it up. It has got
13 five barrels -- at least it is going to have, I counted
14 three.

15 MR. BELL: Well, the applicant
16 is going to require eight new tows I take it to
17 accomodate its needs.

18 A Yes, sir.

19 Q And --

20 THE COMMISSIONER: Excuse me,
21 eight new what?

22 MR. BELL: Tows, T.O.W.S.
23 A tow consists of six barges and a tug, I believe. And
24 each tow of course will require a crew to operate it.
25 Now, if it takes.

26 MR. GENEST: Now, you put a ques-
27 tion and you have not had an answer from Mr. Dau. Was
28 that a question or a statement? Does the witness agree
29 with that?

30 A I agree.

1 THE COMMISSIONER: Next question.

2 MR.BELL: Well, assume for the
3 moment that it takes about six years to train a barge
4 crew.

5 A I do not have to assume
6 that, sir, I am advised by Northern Transportation that
7 they can undertake some training and I think one
8 year on the river, actually on the river, gives
9 them some valuable trained people which they would
10 blend in with other people in their organization,
11 two years on the river just makes them that much better.
12 I do not think that they have ever spoke to me in
13 terms of six years. Obviously in six years you acquire
14 a lot more experience, but to go out and manage the
15 ship -- they would, the actual captain, I suppose
16 would come from existing complement .

17 Q They would then have to,
18 they would be promoting people to be captain from their
19 existing crews?

20 A This is what I understand --

21 Q People who are not
22 now captains and they would be hiring new people to
23 replace the people that they promoted?

24 A Yes.

25 Q And these new people would
26 of course not be as experienced as the ones that had
27 been working with them for some time --

28 A Yes.

29 Q Is that correct?
30

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 A Yes, true.

2 Q Would you agree with
3 me that as a general principal, the more experience
4 that a captain has in navigating the river, especially
5 the rapids areas, the less the risk is of having
6 an accident?

7 MR. GENEST: I will stipulate
8 that on behalf of the applicant.

9 MR. BELL: Well, I am just
10 going through the assumptions that I was asked to
11 do.

12 THE COMMISSIONER: Do you
13 say, Mr. O'Rourke, that a man in charge of a tug
14 towing six barges from Hay River to Inuvik or
15 Tuktoyaktuk, that you could -- you could become a
16 captain in one year?

17 A I did not intend to
18 say that, sir. Just as a little technicality --
19 they really -- these tows push, they push the
20 barges down the river --

21 Q All right -- push.

22 A I do not know the
23 ins and outs of the barging operation in minute
24 detail. I do understand that some of the captains
25 are experienced in segments of the river and what
26 I cannot tell you right now is whether one captain
27 would take a tug from the mouth of the river all the way
28 to Inuvik, but I think what I was trying to say was that
29 and as Mr. Bell has brought out, is that if Northern
30 -- say, Northern had to suddenly staff up for eight

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 more tows, that their captains and probably their,
2 what do they call them, the man in the engine room,
3 first mate -- the chief engineer -- these would
4 come from their existing complement of personnel and
5 then the second or third rank persons on the tugs
6 would be the newly trained officers.
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Dau, O'Rourke, Williams
Cross-Exam by Bell

1 MR.BELL: You would agree with me then
2 that the
3 risk of an accident is greater at the rapids areas
4 than it is at other areas along the channel?

5 A I don't think I know
6 enough about barging to agree with you or disagree with
7 you, sir.

8 Q So you couldn't agree
9 with me or disagree with me if I were to suggest that
10 dredging of these areas would decrease the risk of an
11 accident?

12 A I'm trying to remember
13 if the Northern Transportation, in their efforts to get
14 the government to do some dredging, they may have
15 included that as one of the benefits, would be reduced
16 hazards, but I can't recall that for sure.

17 Q If I were to suggest to
18 you that the dredging of an area such as the Providence
19 Rapids would result in an increased capacity for the
20 barge system, would you be able to agree with me?

21 A As I understand it, there
22 are several spots between Providence and Fort Simpson,
23 if they were all dredged then the system could handle
24 more tonnage; but if they only did one -- and I don't
25 know which one -- but one may not allow you to pass
26 through the other four with substantially increased
27 tonnage.

28 Q But you really couldn't
29 say one way or the other?

30 A I suppose if you have
five spots you could pick the worst one and dredge it,

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Cross-Exam by Bell

1 and there would be an improvement for passage through
2 the other four. But it wouldn't give you the full
3 draught that N.T. is after in trying to have the five
4 spots dredged.

5 Q It would eliminate the
6 delay that's required for relaying, though, wouldn't
7 it?

8 A Yes sir.

9 Q And in that respect it
10 would increase the time available -- or decrease the
11 time needed to transport material down the river.

12 A Yes sir.

13 Q And it would therefore
14 give you greater flexibility in logistics scheduling
15 for the pipeline, wouldn't it?

16 A In principle, yes. I
17 couldn't quantify that though.

18 Q Will it be necessary to
19 dredge the Hay River?

20 A I haven't heard it
21 discussed. I haven't heard N.T. say that this would
22 be required.

23 Q Well, you don't know
24 from your own personal knowledge?

25 A I don't know from my
26 own personal knowledge.

27 Q And if I asked you the
28 same question about the Peel River.

29 A I don't know.
30

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 Q The applicant -- perhaps
2 I should just refer to the application here -- I'm not
3 sure what exhibit number this is, it's the construction
4 plan, Section 13-A, and it's at tab No. 13-A.3 entitled:
5 "Logistics,"
6 at page 14.

7 THE COMMISSIONER: What was
8 that again?

9 MR. BELL: It's tab 13-A.3,
10 it's the large volume called:
11 "Construction Plan,"
12 and it's at page 14 of that tab, about the fourth para-
13 graph down on that page it says:

14 "The present river barging equipment and additions
15 to it forecast to be in service by commencement
16 of construction, are expected to be utilized to
17 near capacity with a normal increase in demand
18 for facilities,"
19 and it goes on to say that,

20 "The applicant will require an additional eight
21 tows to serve its requirements."
22 Now I take it -- well, perhaps I should ask you, is
23 the normal increase in demand for facilities meant to
24 envisage the situation in the absence of the construc-
25 tion of the pipeline?

26 A Yes sir, mainly just
27 the community re-supply and a small amount of oil and
28 gas exploration.

29 Q Well perhaps, so you have
30 essentially two systems that would be required, you have

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 the existing system, the existing barge capacity, plus
2 the additional capacity required to serve the pipeline.

3 A Yes sir.

4 Q Now, can you tell me
5 which portion of that system, the existing system or
6 the additional system would be used to accommodate any
7 secondary economic activity generated by pipeline con-
8 struction?

9 MR. GENEST: I don't under-
10 stand that question, Mr. Commissioner. We're expanding
11 an existing system. Does my friend want to know which
12 particular tug is going to be used for that purpose?

13 MR. BELL: No sir. What I'm
14 trying to get at is will the additional eight tows
15 required by the applicant be used to service whatever
16 secondary economic activity is generated by the
17 pipeline, or will that economic activity have to rely
18 on the system in the absence of those eight tows?

19 THE COMMISSIONER: You mean
20 if additional activity is generated during the period
21 of construction, would there have to be more --

22 MR. BELL: We have essentially
23 two systems, sir. We have the system that will be used
24 by -- well, the normal increase in demand as if the
25 pipeline weren't being built, and we have the system
26 which will presumably be dedicated to the pipeline, and
27 I would like to know which of those two systems will
28 serve any secondary economic activity which is generated
29 by the pipeline.

30 THE COMMISSIONER: Generated

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 during the lifetime of construction?

2 MR. BELL: Yes.

3 THE COMMISSIONER: Can you answer
4 that?

5 A Well, my response would be
6 that the existing system, they have their own respon-
7 sibility for gearing up to handle whatever growth takes
8 place. The pipeline project is such a large one in
9 itself that we identified that increase in capacity, if
10 you will, which would be required to handle thing. You
11 know, if and when the pipeline goes ahead there could
12 be additional oil and gas exploration in the delta, and
13 these activities could result in a demand for more
14 barging capacity if the existing system can't handle it,
15 and we would just expect that the operators would gear
16 up to handle that capacity in the normal course of
17 events.

18 MR. BELL: Q So the phrase then,
19 "Normal increase in demand for facilities,"
20 really includes the secondary economic activity which
21 might follow in the wake of a pipeline.

22 A In the wake of a pipeline?

23 Q As a result of the con-
24 struction of the pipeline, as a result of the pipeline
25 activity.

26 A Yes, the existing system
27 would have to handle that, or be expanded to handle it,
28 and we have no way of knowing what that would amount
29 to or how to identify what extra capacity is required.
30 This is left to the operators.

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 Q Thank you, that's what I
2 wanted to know. I think Mr. Williams might be able to
3 answer this question.

4 Could you arm yourself with
5 Exhibit No. 99? It's entitled:

6 "Prime Route with Fort Simpson Amendment.
7 Summary of Terrain Units in Miles, and Estimated
8 Blasting Requirements."

9 WITNESS WILLIAMS: Yes sir,
10 I have that.

11 Q Can you tell me, are
12 we able to tell by comparing the data on this table
13 with the alignment sheets, with more or less reasonable
14 precision the milepost locations where blasting can
15 be expected?

16 A Yes sir, I would think
17 so.

18 Q So that if we take an
19 example, if you look down the left side of the page
20 under the column called,

21 "Terrain Types,"
22 and come down to one called,

23 "A.M.P."
24 which says it stands for alluvial meander plain, and
25 if you follow that line across to the column entitled,
26 "Physiographic Division No. 11, Fort Good Hope
27 to Fort Simpson,"

28 we find the figure 4.2 with an asterisk beside it.
29 Do I understand that to mean that there is 4.2 miles
30 of alluvial meander plain between Fort Good Hope and

Dau, O'Rourke, Williams
Cross-Exam by Bell

1 Fort Simpson which will be blasted, which will have
2 to be blasted?

3 A That is our estimate, yes,
4 That is a conservative estimate, I think, as I've
5 suggested earlier.

6 Q Well, is there any other
7 terrain types known as A.M.P. in that stretch of the
8 line between Fort Good Hope and Fort Simpson? Does
9 that 4.2 miles represent the entire amount of A.M.P.
10 in that stretch?

11 A Yes, I think that's
12 correct.

13 Q And that would be correct
14 with the other asterisk numbers, they represent the
15 entire amount of blasting in that -- the entire amount
16 of that terrain type in the given stretch of the line?

17 A Yes sir.
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Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 MR. BELL: That concludes my
2 cross-examination, Mr. Commissioner.

3
4 CROSS-EXAMINATION BY MR. BAYLY:

5 Q Mr. Dau, if I could
6 address my questions to you in the first instance, and
7 referring to answers that you have made on this appear-
8 ance and on your first appearance before this Commission
9 regarding weather conditions on the North Slope. If I
10 could refresh your memory first of all by reading from
11 Volume 18 of the transcript, page 2012, line 28, the
12 question being:

13 "All right, if I were to suggest to you, Mr.
14 Dau, that during the construction months that
15 North Shore of the Yukon, the Beaufort Sea side
16 is prone to some bad blizzards and white-out
17 conditions which last for long periods of time
18 in some years, would you be able to agree or
19 disagree with me?"

20 And your answer was:

21 "I would agree with you."

22 The next question was:

23 "And would that affect construction schedules?"

24 The answer was:

25 "Yes, it does."

26 Do you recall those questions and giving those answers?

27 WITNESS DAU: Yes.

28 Q And as I understand, we
29 do have with construction schedules some problems from
30 extended periods of white-out which have been

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 explained by you as being something that would hold
2 up the construction schedule, is that correct? Or
3 might possibly, they wouldn't necessarily, perhaps.

4 A It would affect the
5 construction schedule. I think I've explained that
6 we've allowed for some down time, if you want to call
7 it that, in the construction schedule for such events.

8 Q Now, I recall your
9 explaining that, Mr. Dau, and the thing that interests
10 me, I believe we were referring to meteorological studies
11 that you were aware had been done or were to be done
12 in this area, are the down time calculations based on
13 such meteorological studies?

14 A They form a part of it.
15 It's a judgment matter, certainly they were considered,
16 yes.

17 Q All right, have those
18 meteorological studies been done in the recent past,
19 or are they things that are still to be done?

20 A No, it's a matter of
21 compiling the existing data from wherever we can get
22 it. The weather records on this particular area from
23 the DEW Line stations, for instance.

24 Q All right, and do you
25 feel that you have sufficient data for a sufficient
26 number of years to be able to give you a forecast that
27 will reasonably allow you to take a percentage of down
28 time caused by weather and feed it into the calculation
29 of how long it will take to do these various spreads
30 on the North Slope?

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 A Yes, we believe that the
2 construction schedule that we have allows sufficient
3 non-productive days to take care of such events.

4 Q All right. Now, I gather
5 that weather is not the only factor that goes into
6 down time, and I think Mr. Williams has referred to
7 this. He may want to answer this question. One of the
8 other factors, I believe, is equipment down time that
9 there may, for example, be the requirement to borrow
10 a ditcher from another spread if two or three of them
11 go down in a spread that's working, is that correct?

12 WITNESS WILLIAMS: I don't
13 recall saying that, Mr. Bayly.

14 Q I believe you said that
15 there would be two or three ditchers required per
16 spread, is that correct?

17 A Yes, I think I said that,
18 yes.

19 Q All right, now if those
20 two or three ditchers all went down because their teeth
21 were bad or because there was a mechanical failure in
22 the motor, would it be necessary to borrow one from an
23 adjacent spread?

24 A Well, the plan is to have
25 at least one spare machine with each spread. If such
26 a sad occurrence happened, presumably it wouldn't
27 happen at the adjacent spread and there's a possibility
28 of getting a machine there, but we think that it would
29 be necessary to have enough spare capacity in each
30 spread to be self-sufficient.

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 Q And you feel that having
2 three machines per spread would be sufficient, is that
3 correct?

4 A These are ditching machines.
5 There is other excavating equipment on the spread, of
6 course, to take care of the areas that require blasting.

7 Q Would you consider revert-
8 ing to blasting or going to blasting if your ditching
9 equipment all went out of service on a single spread?

10 A The first alternative
11 would be to try to get one from -- one or more from
12 adjacent spreads. To substitute blasting for any
13 extended period would be difficult. You wouldn't have
14 the -- enough equipment to do the whole segment, no.

15
16 Q Is blasting more -- I'm
17 sorry, I didn't let you finish your answer.

18 A For a short term period
19 which we think, ^{if} you can visualize the case at all where
20 all three ditching machines are in bad order, blasting
21 as a short stop-gap is possible but we wouldn't see it
22 as being too likely.

23 Q All right. Now your esti-
24 mate that the three ditching machines would be suffi-
25 cient is based on the problems of teeth being ironed out
26 prior to the commencement of ditching, is that correct?

27 A Yes sir.

28 Q And you estimate that that
29 will be cleared up by the time that your schedule would
30 begin doing this work, does that appear to be the case?

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 A Well, Mr. Bayly, I think
2 we have said that the teeth are now available, are
3 capable of ditching a very high percentage of the line.
4 We are trying to improve on that to increase that
5 percentage.

6 Q So the real problem, even
7 if you weren't able to develop the teeth in time, would
8 be to have a larger supply of teeth on hand, would
9 that be fair to say?

10 MR. GENEST: A couple of Dentists.

11 A Yes, this sheet that
12 Mr. Bell has just referred to is our conservative
13 estimate of what blasting is required, and we think
14 that with the equipment -- the wheel type ditching
15 equipment that is available now that it is capable of
16 doing the balance of the system.

17 THE COMMISSIONER: Excuse me,
18 that's Exhibit 99, is it? Miss Hutchinson, could I
19 see Exhibit 99, please?

20 MR. BAYLY: Perhaps either
21 Mr. Williams or Mr. Dau can answer this question.

22 Q Should the cross-delta
23 route be chosen as the route on which the pipeline
24 would be constructed, and therefore Shallow Bay ends
25 up being crossed by the pipeline, will the size of
26 the Shingle Point camp increase from the size that
27 has been projected? I am not sure,
28 Mr. Commissioner, if these spread
29 sheets are before you, sir.

30 THE COMMISSIONER: The new ones?

MR. BAYLY: The new ones, yes.

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 This is the second in that package dealing with Mile-
2 post 254 to 313.

3 WITNESS DAU: I don't think it
4 would change, sir.

5 Q The size of the camp
6 would remain the same?

7 A Essentially the same, sir.

8 Q Would the personnel
9 projections during the periods of time be the same?

10 A Yes.

11 Q Would an additional camp
12 have to be put on the east side of Shallow Bay or
13 somewhere in the vicinity?

14 A I'm not sure which side
15 of Shallow Bay it's on, but it is the compressor station
16 site in the delta in the cross-delta alternative, and
17 that would become a camp site for construction.

18 Q So if we assume, as I do,
19 that Shingle Point is on the west side of Shallow
20 Bay, there would be a camp on a compressor station
21 site on the east side of Shallow Bay?

22 A I believe it's on the
23 east side, yes.

24 Q And have any projections
25 been made as to what sort of a camp that would be or
26 how it would compare in size with the Shingle Point
27 facility?

28 A It would be very similar.
29 I don't have that information here, but it would be a
30 similar sized spread.

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 Q You're saying that you
2 don't have the material here suggests to me that it
3 may be available at some place. Do you recollect
4 whether or not that projection for a camp on the east
5 side of Shallow Bay has been made by Northern Engineer-
6 ing or someone else?

7 A Yes, what I'm referring
8 to is the number of people that would be involved in
9 constructing that line segment, and I'm pretty sure
10 that it's the same order of magnitude of 7 to 800
11 construction workers.

12 Q I see.

13 A I just don't have the
14 precise number.

15 MR. BAYLY: Mr. Commissioner,
16 I have the sheets for some of the communities. There
17 is a sheet for a camp near Aklavik which will be of
18 concern to the people of Aklavik, and I'm wondering if
19 we might ask Mr. Genest if there is to be an alternate
20 camp in the alternate proposal which would be within
21 the area used by the people of Tuktoyaktuk, I believe,
22 if that information could be supplied so that the
23 people of that community will be able to assess that
24 as far as part of the impact of the proposal.

25 MR. GENEST: I'll do my best
26 to procure that, sir.

27

28

29

30

1 May I make a
2 note, an accurate note, Mr. Bayly, I just want to make
3 sure what it is that we are looking after.

4 MR. BAYLY: Mr. Genest, as
5 accurately as I know it, on the east side of Shallow
6 Bay there is a proposed compressor station site which
7 might be the site of a construction spread camp should
8 the cross delta proposal become a concrete reality.

9 THE COMMISSIONER: That
10 compressor station is there, you mean, on the
11 Richards Island leg?

12 MR. BAYLY: Yes, sir, as
13 I understand it.

14 MR. GENEST: And what you
15 want is exactly what, Mr. Bayly?

16 THE COMMISSIONER: If the
17 cross delta route is adopted as an official alternate,
18 then will you be putting a spread at that compressor
19 station? Mr. Dau seems to think you might be.

20 MR. GENEST: We can provide
21 that?

22 WITNESS DAU:

23 A Yes, sir.

24 MR. GENEST: Then we will
25 do so.

26 MR. BAYLY:

27 Q Would you know, Mr. Dau
28 if there are any other spreads that would result from
29 this cross delta alternative apart from the one that
30 you have just referred to, that are not presently listed

1 as projected camps?

2 A Construction plans for
3 the cross delta route utilizes three construction
4 spreads from the Alaska/Yukon border to the junction
5 with the lateral from Taglu south. There are
6 two that are essentially west of the delta, they
7 each construct about 67 miles and the remaining 43
8 miles is constructed by one spread and as I say I
9 do not have all the information here, it does
10 indicate that there is a construction -- or would be
11 a construction camp at compressor station CD-08.

12 Q Therefore, on the
13 east side of the Shallow Bay, there would only
14 be the one camp, the other two camps would be on
15 the west side on the Yukon coast or in the very
16 western part of the Northwest Territories?

17 A That is correct.

18 Q Is there anything
19 different in terms of construction schedule time for
20 crossing Shallow Bay or is the projected approximate
21 one mile per day applied, does it apply to the
22 crossing of Shallow Bay as well?

23 A No, Shallow Bay is a
24 major water crossing and it would be constructed by
25 a different crew than the main line contractor and
26 the -- it would be constructed during the summer,
27 for instance. We would have to construct it during the
28 summer, for instance. We would have to construct
29 it in the summer.

30 Q Would it be similar to the

Dau, Williams, O'Rourke
Cross-Exam by Bayly

1 Fraser River crossing that Mr. Williams showed us or
2 have you any knowledge of your own of the kind of
3 construction technique that would have to be applied
4 to that crossing?

5 A It would be similar
6 in a general way. It would involve dredging a
7 trench, the establishment of a work pad on one side
8 or both sides of Shallow Bay, the welding up and
9 concrete coating of pipe into lengths of some 2,000
10 to 3,000 feet and then pulling the pipe across
11 Shallow Bay, -- generally, it is very similar to
12 a river crossing, it just has to be a very wide
13 shallow one.

14 Q Right. Now, I gather
15 this is an exception to the non-dredging policy that
16 some crossing like this has to be dredged, is that
17 correct?

18 A Dredged in the --

19 Q In the Shallow Bay --
20 you have to dredge to make the trench, is that correct?

21 A Dredged in the sense of
22 using a floating hydraulic dredge rather than excavating
23 with a drag line for instance, is that what you are
24 referring to?

25 Q Exactly, yes.

26 A Yes, in our view, this
27 would be dredged, yes.

28 Q All right, now, when you
29 say the summertime, what part of the summer time or
30 would the entire summer -- an entire summer or more be

1 needed to do this crossing, have any studies been
2 done on that?

3 A I am sorry I do not
4 have all this information with me. As I recall,
5 there was a four to six weeks period, I believe in
6 July, the latter part of June and July where we were
7 advised that we should not be dredging in the bay.
8 The plan that we have developed for this crossing
9 leaves that window where we are not active within
10 Shallow Bay and the dredging takes place after that
11 period of time up until freeze up.

12 Q So would that mean
13 you would not commence until after the whales were
14 out of the bay?

15 A That is my understanding
16 of the circumstances.

17 Q So there would not be
18 June dredging, a break and then late July or August
19 dredging. It would not start until after that
20 period, is that how you understand it?

21 A I am not sure of that,
22 sir. I am not positive of that.

23 Q Now, when you say you
24 are not sure, does that mean that it has not been
25 decided or that you just do not have it here?

26 A I just do not have it
27 here. I cannot recall whether there was some dredging
28 early in the year -- early in the summer --

29 Q Yes --

30 A I am sorry, I do not have

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 the information on it.

2 Q I wonder perhaps, Mr.
3 Commissioner, if that material could be supplied
4 when it is available.

5 MR. GENEST: Yes, sir, as I
6 have said before, we intend to make quite a full
7 filing on the whole cross delta alternative which I
8 am sure will touch on those matters and I am pressing
9 to try and have that ready before we break into the
10 community hearings.

11 THE COMMISSIONER: You said,
12 Mr. Genest, that a corporate decision was being made
13 about the cross delta route -- I think you did,
14 anyway.

15 MR. GENEST: Perhaps I can
16 give you my instructions, subject to correction, I
17 think you will hear from Mr. Horte on the matter.
18 As I understand the state of the matter as it now
19 stands, is that the view of Arctic Gas is that the
20 engineering and economic superiority of this line --
21 of this route is fairly well settled in favour of
22 that alternative, but that there -- the feeling
23 is that another season of environmental work must
24 be done before we can bring up our level of certitude
25 to the level that we have in the prime route and the
26 interior route and -- as I understand it, some more
27 geotechnical work may be planned for the summer, so
28 that the decision is subject to those matters that
29 I have mentioned, and that is the level of the art
30 now and I intend to lead evidence from Mr. Horte

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 on the state of that alternative route when he is
2 called.

3 MR. BAYLY: Mr. Commissioner,
4 I do not intend to go very far in the cross delta
5 today because I realize that there will be a presentation,
6 but as it affects construction schedules and to a
7 certain extent techniques, I would like to know what
8 this panel does know of it.

9 THE COMMISSIONER: Certainly,
10 -- before you do that, Mr. Dau, it is hard for us to
11 recollect all that has been said in the last two
12 months at this hearing, but I understood that the
13 river crossings, the pipe was to be laid at the
14 main river crossings during the winter. Shallow Bay,
15 if we consider it a river crossing, is an exception
16 to that general rule, is it, or have I misunderstood?

17 A No, sir, we are
18 planning on installing the major river crossings and
19 those would be the Mackenzie type river crossings.
20 The plan is to install them in the summer, sir.

21 MR. GENEST: I think that
22 you may have been mislead by a remark of Dr. Hardy
23 where he was talking about piling --

24 THE COMMISSIONER: Piling
25 ice --

26 MR. GENEST: --excavated
27 material on ice and I think that was corrected by
28 a member of the same panel. I think that our intention
29 sir, to do all the major river crossings in the
30 summertime.

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 A Yes, and there would be
2 other crossings that are not classified as major, can
3 be constructed, well, the smaller ones would be
4 constructed in the winter.

5 THE COMMISSIONER: Well, forgive
6 me, I will go back over that.

7 MR. BAYLY:

8 Q Would you be able to
9 tell us, Mr. Dau, or Mr. Williams, how many men would
10 be involved in the construction of the Shallow Bay
11 river crossing or bay crossing and over how many
12 seasons?

13 A I would have to
14 get the information from Calgary with respect to the
15 size of the crews. The -- I would sooner not try
16 to guess that.

17 Q And as to the number of
18 seasons, do you have any idea whether it would take
19 one season or more than one season to do this crossing?
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Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 A I believe the current
2 plan is to install the water crossings in one season,
3 but that's not absolutely necessary. It could be done
4 over two seasons. There are dual lines, you
5 understand I'm talking about installing a dual line
6 first-- one line first and then come back and install
7 the next one.

8 Q All right, and would any
9 of this depend on environmental assessment as to the
10 impact of installing over two seasons as opposed to one?

11 A I'm sure it would, sir.

12 Q Now, the men who would
13 construct river crossings, would they live at the
14 Shingle Point camp and be taken to the work site, or
15 would an additional camp have to be constructed on
16 one or the other side of Shallow Bay?

17 A There would be a construc-
18 tion camp at that compressor station that I referred
19 to, CD-08, which -- I'm sorry, I don't have the align-
20 ment sheet here that shows the exact location, but
21 as I recall, there is a permanent road from that com-
22 pressor station to one of the major river crossings.
23 That crew would obviously be camped at that compressor
24 station site. For the other river crossings, there
25 would be small crews that would essentially live right
26 at the jobsite. They would probably have a camp on a
27 barge, for instance.

28 Q All right. Now moving
29 on from that and I gather with regard to all that
30 information for which there are not answers here today,

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 Mr. Commissioner, that at some appropriate time Mr.
2 Genest will have witnesses with that information.

3 MR. GENEST: We will, sir.

4 MR. BAYLY: The techniques
5 to put a line into the ground have been discussed.
6 Has any work been done by Northern Engineering Services
7 with regard to the possibility of an off-shore alter-
8 native, and the techniques that would be required to
9 construct such a line?

10 MR. GENEST: Well, Mr. Commis-
11 sioner, doesn't that get us into the consideration of
12 alternative routes that I thought there was general
13 agreement we were going to defer to some time -- I
14 don't know exactly when.

15 MR. BAYLY: My point in making
16 this, Mr. Commissioner, is based on technique rather
17 than choice, and it's based as well on the number of
18 men that would be required and whether they would be
19 at the projected camps, or whether an entirely new
20 system would have to be set up to do this. I believe
21 it is within the realm of this panel to at least comment
22 on it. They may not have that information and I don't
23 plan to delve into it any deeper than that.

24 THE COMMISSIONER: Well, I
25 think you might as well proceed. There is some differ-
26 ence between ultimate corridors and ultimate routes. If
27 you wanted to discuss the Fairbanks route I think we
28 would have to stop you, but you haven't said how far
29 off-shore. The cross-delta route takes us fairly close
30 to the shore of the Arctic Ocean, so --

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 MR. BAYLY: I think I've already
2 got my feet wet then, sir.

3 Q Have you, Mr. Dau any
4 information--

5 THE COMMISSIONER: You had better
ask the question, I can't stand much more of this.

6 MR. BAYLY: Mr. Dau, do you
7 have any information on an off-shore route and whether
8 it would require different techniques and personnel
9 allocation?

10 A Yes, it would be quite
11 different. The off-shore studies that were performed,
12 as I recall, envisaged laying the pipe in approximately
13 15 to 20-foot water depth, and that's a considerable
14 distance off-shore.

15 THE COMMISSIONER: Excuse me,
16 on the sea bed?

17 A Yes, this would be
18 water depth before the trench was dug, sir.

19 Q And then the trench?

20 A Then the trench
21 would be dug. This is necessary because the techniques
22 in off-shore pipelining utilize very large lay barges,
23 and the crew lives on the barge and welds up the pipe
24 on the barge. It moves along and lays the pipe.

25 MR. BAYLY: This is summer
26 construction then, because you're talking about barges.

27 A Oh yes, sir; and the
28 material would be moved to the barge -- to the lay barge
29 by other barges. It's a self-contained operation liter-
30 ally at sea.

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 Q In which case there would
2 then be no camps on the shore. Would there be stockpile
3 sites on the shore, or are they so self-contained that
4 they carry their equipment and supplies with them?

5 A The plan that was devel-
6 oped requires a compressor station, obviously, and
7 those compressor stations were on shore so the pipeline
8 would have to come on shore to the compressor station.
9 Those sites would be stockpile sites and there would be a
10 gravel pad and a landing strip and so on. There would
11 be camps at that location for stockpiling and for
12 construction of the compressor stations.

13 Q Would this substantially
14 change the logistics in Mr. O'Rourke's department for
15 the supply of materials, or would your projections, Mr.
16 O'Rourke, be the same whether it were an off-shore or
17 an on-shore coastal route?

18 A It would be quite a bit
19 different, in my view.

20 Q All right, how about
21 you, Mr. O'Rourke?

22 WITNESS O'ROURKE: I've never
23 considered it.

24 Q So it's really something
25 that hasn't even been passed on to the transportation
26 and supply logistics people.

27 WITNESS DAU: No, it was not
28 done in that amount of detail.

29 Q Would it involve similar
30 numbers of people to construct such a facility, or would

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 this be a smaller number of people?

2 A I suspect it would be
3 slightly smaller, but I'm not sure.

4 Q Now when you say "slightly
5 smaller", I have a picture in my mind of somewhat less
6 than 800 men living on a barge.

7 A No, there would be several
8 operations, obviously. There would be the lay barge,
9 there would be the concrete coating of the pipe which
10 would probably be done at some other location, there
11 would be the trenching or dredging that would be
12 required and so on. So it's not -- everything isn't
13 contained within the one barge. I suspect that the
14 total labor force would be less, and I'm really guessing
15 but it may go from say 700 down to 500 people involved
16 in that operation, but I'm really guessing.

17 Q Thank you. Now if I can
18 move to you, Mr. Williams, on relative rates of blast-
19 ing and ditching, I realize ditching rates are differ-
20 ent for different kinds of terrain, different kinds
21 of soil or rock and soil mixture. But can you give
22 us some idea of whether ditching is a faster method of
23 making a trench than blasting is?

24 WITNESS WILLIAMS: Well, it
25 would be a function of how much equipment you'd have
26 Mr. Bayly. If you were faced with a massive amount
27 of blasting requirement, say like in Northern Ontario
28 in the Shield you would set up crews and equipment
29 to take care of the schedule that you required. It's
30 not, for this particular project we're not anticipating

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Cross-Exam by Bayly

1 that much, so the equipment requirement would be tail-
2 ored to fit the job. Generally that blasting would
3 be -- the areas requiring blasting would be pre-deter-
4 mined and would be generally done ahead of the other
5 activity rather than behind it.

6 I don't know if that answers
7 your question, but it's just a difficult one to answer.

8 Q I realize from what you're
9 saying that you ^{would} anticipate using blasting only in
10 difficult areas, and therefore would only be equipped
11 to blast in difficult areas, give or take whatever
12 margin you require.

13 A Yes sir.

14 Q Now, let me just present
15 you with a scenario and ask you to comment on how you
16 would anticipate behaving or how you would anticipate
17 your construction people behaving. Assume that because
18 you ran into some difficult ditching, where your rate
19 was slower than you might have projected, would you
20 anticipate supplementing ditching with blasting, despite
21 your earlier projections to help you keep on schedule?

22 A I would have to say yes.

23 Q And would you build that
24 into your construction supply plan so that you would
25 have sufficient blasting equipment and supplies to
26 be able to do that if the occasion arose?

27 A I would certainly hope that
28 we would have a better handle on the blasting require-
29 ments. If the situation that you describe occurred,
30 I would think it would mean bringing in additional

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 equipment and material.

2 Q All right, who would
3 decide that you should blast in order to catch up the
4 day or two that for example you might have lost due
5 to slower ditching or some other cause?

6 A I would think it would
7 be a joint decision between the contractor and the
8 construction manager and the owner.

9 Q In other words then it
10 wouldn't be just sort of an on-the-job decision from
11 day to day. It would be one that you would anticipate
12 would involve consultation.

13 A For the situation that
14 you describe, yes. We would hope that there would
15 be a pretty fair idea ahead of time of the locations
16 that -- where blasting would be required, and that
17 would probably be surveyed in with the ditch line
18 location indicating to the contractor where in the
19 engineer's opinion blasting would be necessary.
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1 Q Mr. Williams, if we
2 add another dynamic to it, I am thinking of weather
3 and perhaps what you have described as a large herd
4 of cariboo, say, forcing a stoppage in work for a day
5 or something like that, would these be reasons to
6 want to catch up and to perhaps have to change your
7 excavation method in order to do so?

8 A Well, it is certainly
9 a poor substitute, blasting is a poor substitute for
10 a wheel ditching operation and if you did not have
11 sufficient equipment there to do an on a production
12 rate, you would not really gain very much, Mr.
13 Bayly.

14 Q All right. Mr. Commissioner
15 I have been told that the coffee is ready and I think
16 I have come to a natural break.

17 THE COMMISSIONER: Well, we
18 will adjourn then for a few minutes.

19
20 (PROCEEDINGS ADJOURNED)

21 (PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

22
23 MR. BAYLY:

24 Q Mr. Dau, before we leave
25 the cross delta proposal and its construction methods and
26 scheduling, I have a question with regard to environmental
27 concerns, we mentioned and you mentioned that construction
28 would take place in the summer on a schedule which
29 would accomodate the whale migration into that area.
30 Do you know of your own knowledge whether any of the
other species of aquatic life and bird life have been

1 taken into account in this projected construction
2 during the late part of July until freeze up?

3 MR. GENEST: Is that in
4 cross delta, Mr. Bayly?

5 MR. BAYLY: Yes.

6 WITNESS DAU:

7 A Yes, they were considered.
8 We had some advice from the environmental consultants
9 in preparing this plan. I might add, I found some
10 futher information on the cross delta which I had
11 in some work papers and I have given you some wrong
12 information with respect to a construction camp and
13 maybe I could correct that now.

14 Q Could you correct that
15 please sir, yes.

16 A The cross delta proposal
17 has dual pipelines from West Channel, which is
18 west of Shallow Bay, over to the junction with the
19 lateral from Richard's Island. There is a work pad
20 and a stock pile site at West Channel, access to that
21 by barge. There is a work pad and a stockpile site on
22 the west side of Shallow Bay. There is a work pad on
23 the east side of Shallow Bay. There is a work pad
24 and a stockpile site at Reindeer Channel. There is
25 also an all weather road from that stockpile site to
26 compressor station CD-08 and on this map it looks
27 like it is about three miles away. That is east of
28 Reindeer Channel, and there is a work pad at, I believe
29 it is Langley Channel. The compressor station site
30 CD-08 is not utilized as a camp site for pipeline

Dau, ORourke, Williams
Cross-Exam by Bayly

1 construction, the work pad and stockpile site pad
2 at Reindeer Channel is utilized.

3 Q And it would again be
4 a camp to the best of your knowledge, similar to the
5 camp at Shingle Point in size and facilities?

6 A Yes.

7 Q Now, moving on then
8 to Mr. Williams with this question with regard to
9 blasting, Mr. Williams, I raised a question at an
10 earlier stage with regard to archaeological material
11 and its retrieval. Would blasting permit this kind
12 of retrieval or would it not?

13 WITNESS WILLIAMS:

14 A You are speaking of a
15 site, Mr. Bayly, that had not been established ahead
16 of time, something that you are unaware of that you
17 ran into during operation, is this --

18 Q That is correct, Mr.
19 Williams, perhaps it might have come out from the
20 drill holes that were going ahead of the construction.

21 A I think that the first
22 attempt would be to avoid archaeological sites whether
23 they were predetermined ^{or determined} just ahead of the work, I
24 think that an attempt would be made to avoid it. If
25 you missed them altogether and you blasted in an
26 archaeology site I suppose you would do slightly more
27 damage than if a wheel ditcher had gone through, but
28 not markedly, Mr. Bayly.

29 Q All right, now, you had
30 referred earlier in your evidence to the various

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 alternatives if you come to a caribou herd of what you
2 referred to as a large size. Can you give us an
3 idea in your own estimate of sort of how large a
4 herd it would take to change the schedule or whether
5 you ran into a herd that was smaller than that you
6 would do something else?

7 A Well, that would be
8 difficult for me to say, we would have to be advised
9 by our environmental people that would be on the job.

10 You are speaking of the
11 coastal plain, I understand that--

12 Q Yes.

13 A -- there are a few caribou
14 that do stay in the area all winter, but to my understanding
15 they are very small in number and scattered, not in
16 large herds. No, I could not quantify that for you,
17 sir.

18 Q All right, would this
19 be a job that you would envisage for one of the
20 various kinds of monitors that you would have on
21 the job to help you make this decision?

22 A I would guess that the
23 owners' representative, along with his -- the environment-
24 al consultants would jointly make some decision.

25 Q Now, assume that the
26 caribou were on the line that you wanted either to
27 blast or to ditch, can you envisage herding them
28 away with men or machinery or can you envisage some
29 other way of going about this?
30

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 A I have not heard of
2 that alternative put forward by anyone, Mr. Bayly,
3 of herding them away.

4 Q All right.

5 A I do not know if it is
6 feasible or how disruptive it is, I have no idea.

7 Q The reason I suggest
8 this, Mr. Williams, is that in certain years like
9 this year, caribou have not migrated the way they
10 are traditionally supposed to migrate and some of
11 them appear to be -- to have remained between the
12 delta and the Richardson Mountains where your prime
13 route goes.

14 MR. MARSHALL: Well, if my
15 friend wants him to comment on that and if you are
16 giving some evidence about that, might we have the
17 reference that you are referring to?

18 THE COMMISSIONER: Well, I
19 do not know -- Mr. Genest gave evidence about how
20 close Welland was to the pipemill near Hamilton.
21 Anyone that wants to cross-examine Mr. Genest or Mr.
22 Bayly can apply.

23 MR. BAYLY:

24 Q So you have no plan
25 for this kind of contingency? This was the question
26 that I was leading to, arising out of my observation
27 about the present position of caribou.

28 A Is this occurrence -- I
29 have not heard about it, but I am sure that some of
30 our environmental people who have been in the field will

Dau, O'Rourke, Williams
Cross-Exam by Fayly

1 report this in due course, but is it your information
2 that it is the full length of the west side of the
3 delta that this occurred or did they stay within a
4 three or four mile radius that there might be a method
5 of moving around them and coming back to it at a later
6 date, it would depend on the circumstances, I think,
7 Mr. Bayly.

8 Q All right, then if we
9 make those assumptions that it is in a large group,
10 you would envisage being able to jump over this herd
11 and come back to that area at a later stage or moving
12 around them if that were necessary, is that correct?

13 A Yes, if they were not
14 too widely spread. I think this is a possibility.

15 Q All right, but as to
16 actually moving them, by herding or something like
17 that, that is not in the contingency plans at the
18 moment?

19 A No, sir, I have not
20 heard that discussed.

21 Q All right. Now, Mr.
22 Williams, when you were discussing your projection of
23 the amount of miles per month which I believe is
24 approximately 30, is that correct, of construction?

25 A Did you say 30?

26 Q 30.

27 A Again, we are speaking
28 of the Yukon coastal plain adjacent to the delta,
29 Mr. Bayly?

30 Q Yes, although, I believe

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 your projection was for an average for the route. I see,
2 you are pointing to Mr. Dau, I see, and perhaps he
3 has the information.

4 A I think he gave that
5 testimony originally.

6 Q All right.

7 MR. DAU:

8 A On the Yukon coast, on
9 the coastal route the plan is based on the rate
10 of 0.44 miles per calendar day and then taking into
11 account the estimated non-productive days, the rate
12 per working day is 0.64 miles.
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Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 Q Now at 0.64 miles per
2 day, is that based on your full contingent on the
3 sheets that were distributed today of men working a
4 12-hour day?

5 A In that season, yes, that
6 winter season, yes.

7 Q And in order to keep up
8 this projection would it be necessary to work that
9 12-hour day?

10 A I think I explained
11 previously that 12-hour day probably results in
12 about 10 hours of work, considering travelling time.
13 But yes, it does require the full time to maintain
14 that rate.

15 Q And those men that
16 would be doing this work would be on the job for 12
17 hours, allowing that there is travelling time to and
18 fro, is that correct?

19 A Yes.

20 Q Now, are you acquainted
21 Mr. Dau, with the legislation in the Northwest Terri-
22 tories about hours of work?

23 A Not in detail, no.

24 Q I have a copy of the
25 -- of some sections of the Labor Standards Ordinance
26 which -- and I have actually two copies, one for you
27 to have a look at.

28 MR. SCOTT: Does my friend have
29 an extra copy of that?

30 MR. BAYLY: I can undertake

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 to make them available, but I only brought two copies
2 today.

3 MR. MARSHALL: Mr. Commissioner,
4 it seems to me with respect to a Territorial ordinance
5 there is some question as to whether or not it has
6 any application to an inter-provincial undertaking,
7 such as we're here discussing, and perhaps my friend --

8 THE COMMISSIONER: You say
9 the Federal Labour Code would apply, is that the point?

10 MR. MARSHALL: Well sir, I
11 hadn't been aware my friend was going to raise this
12 point. I simply raise it now and I think the position
13 that would be taken by Arctic Gas would likely be that
14 this is a federal undertaking and federal rules relating
15 to hours of work and so on would be applicable.

16 THE COMMISSIONER: I'm going
17 to let Mr. Bayly pursue it because in the pipeline
18 guidelines reference is made to working conditions, and
19 even to the provisions that should be contained in
20 collective agreements, under which the pipeline is
21 built, and so you can't cross-examine this witness on
22 the law, this is a legal -- this is a Statute.

23 MR. BAYLY: I realize that.

24 THE COMMISSIONER: But go ahead
25 and explore this. It's a beginning, we'll have to
26 get into it in Phase 4 in some depth.

27 MR. BAYLY: Mr. Commissioner,
28 in answer to the protestation made by my learned
29 friend, I did supply Mr. Carter with the information
30 that I was going to raise this as an issue and I don't

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 want to appear to not have given him notice, but I
2 would be questioning on this line and I think Mr.
3 Carter will confirm that.

4 THE COMMISSIONER: Well, we'll
5 accept your word for that. Yes, I think he's confirmed
6 it to Mr. Marshall.

7 MR. BAYLY: Now without
8 Mr. Dau asking you to go into the law itself, should
9 this law apply would it be necessary to re-work your
10 projections of the number of miles that could be done
11 per day if there were restrictions on the number of
12 hours that the men could work either during a month
13 or during a day?

14 THE COMMISSIONER: Well, what
15 does this Statute say? You tell us so that Mr. Dau
16 doesn't have to struggle with it.

17 MR. BAYLY: Mr. Dau, if I
18 could read then to you and you have it before you,
19 Section 5 of the Labour Standards Ordinance, 5(1)
20 reads:

21 " Subject to this part, the working hours of
22 an employee shall not exceed eight hours in
23 a day and 44 hours in a week, and except as
24 provided in this part, no employer shall cause
25 or permit an employee to work longer hours
26 than eight hours in any day or 44 hours in
27 any week."

28 Sub-section (2) contains some exceptions to this and
29 I'll read them: Sub-section (2):

30 "The working hours of a person employed

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Cross-Exam by Bayly

1 (a) in exploration and development of metal,
2 mining and petroleum,
3 including geophysical, seismic-
4 ological and diamond drilling
5 (b) primarily in the transportation of goods to
6 and from isolated areas, or
7 (c) in tourist camps shall not exceed 191 hours
8 in any month."

9 There are other sections that don't apply, sub-sections
10 in 5. Section 6, Mr. Dau, reads:

11 "An employee may be employed in excess of the
12 standard hours of work but subject to Sections
13 11 and 12, the total hours that may be worked
14 by an employee shall not exceed 10 hours in
15 any day, and 54 hours in any week, or such
16 fewer number of hours as may be prescribed by
17 the regulations as maximum working hours in
18 the industrial establishment in respect of which
19 he is employed."

20 Sub-section (2) of that section states that:

21 "Notwithstanding sub-section (1), the person
22 referred to in sub-section (5) (2) may be
23 employed in excess of the standard hours of
24 work but subject to Sections 11 and 12, the
25 total hours that may be worked by such a
26 person shall not exceed 234 hours in any
27 month."

28 Now, sub-section -- or
29 Sections 11 and 12, which have been referred to, I
30 will read to you so that you will know under what

1 conditions a person can work more than this amount of
2 time. 11(1) reads:

3 "On the application of an employer, or an
4 employer's organization, the Labour Standards
5 officer, having regard for the conditions of
6 employment in any industrial establishment and
7 the welfare of the employees may, by a permit
8 in writing, authorize hours to be worked by
9 any class of employee therein in excess of the
10 maximum hours of work prescribed by or under
11 Section 6."

12 Sub-section (2):

13 "No permit may be issued under sub-section
14 (1) unless the applicant has satisfied the
15 Labour Standards officer that there are
16 exceptional circumstances to justify the
17 working of additional hours."

18 I am assuming, Mr. Dau, that
19 this might be a way in which you could say that this
20 was an extraordinary project that requires additional
21 working hours. Would you feel that that would be the
22 sort of thing that could be suggested?

23 MR. GENEST: Mr. Commissioner,
24 I object to that question.

25 MR. BAYLY: I'm not asking for
26 a legal opinion, Mr. Commissioner. I am asking for a
27 way in which he can suggest accommodating the schedule
28 that Mr. Dau has suggested to the law that appears to
29 apply in the Northwest Territories.

30 THE COMMISSIONER: Well, is it

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1 necessary to get an answer from Mr. Dau? Does it help
2 us? The Statute is there, it says what it says. If it
3 applies it's something that has to be faced and
4 suppose Mr. Dau says, "Yes, it is extraordinary."

5 MR. BAYLY: All right. I won't
6 pursue that then, sir. I'll perhaps just confine my
7 questioning to this line.

8 Q Mr. Dau, were you aware
9 of the existence of this ordinance when you drew up
10 your schedule?

11 A Yes, we were aware that
12 there are such ordinances throughout the provinces and
13 the Northwest Territories. As a matter of fact we
14 got exemption from it when we constructed Sans Sault. The
15 test-site at Sans Sault, and it's my understanding that
16 it's the normal procedure in pipeline construction to
17 get extended hours of work. I am not aware of any
18 project that I've been involved with where it's not
19 been possible to get relief from such regulations.

20 THE COMMISSIONER: Well, do
21 you mind telling us who you got the exemption from,
22 the Territorial Government or the Federal Government?

23 A Mr. Williams will have
24 to do this because he got it.

25 WITNESS WILLIAMS: The
26 exemption for Sans Sault was obtained from the
27 Territorial Government.

28 MR. GENEST: I don't think
29 there's any estoppel in constitutional matters.

30 THE COMMISSIONER: Do you mind,

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1 Mr. Bayly, for my benefit, summarizing the point that
2 you sought to make, that is assuming there were no
3 exemption? What is the difference between the hours of
4 work that the construction program contemplates and
5 the hours of work allowed by the Statute? Forgive me,
6 I lost the figures somewhere along the way.

7 MR. BAYLY: Well, without
8 actually multiplying them out, Mr. Commissioner, -- but
9 I can do that, I think, in my head -- if you work 12
10 hours a day and you didn't have any holidays, let's
11 say 30 days a month, that would be 360 hours. That
12 appears to be more than the amount allowed even under
13 extraordinary circumstances.

14 THE COMMISSIONER: Which was
15 234?

16 MR. BAYLY: Yes, I believe so.

17 THE COMMISSIONER: Now that's
18 extraordinary.

19 MR. BAYLY: 234.

20 THE COMMISSIONER: Yes, those
21 are the extraordinary circumstances.

22 MR. BAYLY: Yes.

23 THE COMMISSIONER: Without
24 extraordinary circumstances, what is the maximum of
25 the number of hours allowed per month?

26 MR. BAYLY: In ordinary circum-
27 stances, eight hours a day and 44 hours a week. I would
28 assume that there would be 4 1/4 weeks in a month, in a
29 working month.

30 THE COMMISSIONER: So you'd have

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 176 hours, is that what you'd get?

2 MR. BAYLY: That would be
3 what I would calculate it at, sir, yes.

4 THE COMMISSIONER: Does that
5 first figure, Mr. Dau, of Mr. Bayly's make sense,
6 360 hours, if you've been following this discussion?

7 WITNESS DAU: If we were
8 fortunate enough to start this project and have no
9 down time, and we managed to work every day, in other
10 words every day was 12 hours, why we would finish it
11 pretty fast; but the schedule on the non-productive
12 days, which I'll grant you not all of them are non-
13 work days, but certainly some of them are non-work
14 days, is about 32% in the spread that you're talking
15 about. I can't quite visualize someone going out on
16 a job and working for 12 hours a day, you know, for
17 the continuous winter season. I just don't think that
18 will happen.

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 Q And you envisage approx-
2 imately one third of the time being lost because of
3 the various problems that arise and because, I suppose,
4 of days off and down time?

5 A Not necessarily days
6 off, no, sir. That, it's -- they are non-productive
7 due to weather and to other circumstances but not
8 days off as such.

9 Q All right, and that
10 would mean that approximately 180 hours of 360 possible
11 hours, if that figure were correct, would be time
12 that you could not use for working?

13 A We could not use?

14 Q Yes.

15 A Yes.

16 Q In order to avoid any
17 problems with this is it projected in the construction
18 workers' schedule to have people working shorter periods
19 of time in a month, for example, being in for a
20 couple of weeks and then being taken out or something
21 like that, as I believe has been done on some other
22 projects?

23 A I believe that is a
24 matter of the labour negotiations prior to the start
25 of the job as to what those conditions will be. We
26 have not identified that in our cost estimate or
27 planning.

28 Q Would you agree with
29 me that although that is a labour problem it is also
30 a problem under something like this ordinance that you

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 would have to consider in figuring out how you would
2 plan the logistics of workers moving back and forth.

3 MR. GENEST: Mr. Commissioner,
4 I suggest this is something to be addressed to the
5 legal advisors of the company, that is a legal problem.
6 And I do not think that it is a proper question to be
7 put to this panel.

8 MR. BAYLY: Well, perhaps,
9 Mr. Commissioner, we have already had an answer which
10 suggests that not only the legal advisors, but people
11 like Mr. Williams do do this kind of work and perhaps
12 this panel does have some sort of experience in that
13 kind of thing.

14 THE COMMISSIONER: Well,
15 is the question whether you took into consideration the
16 necessity, presumably, of getting some kind of collective
17 agreement with a trade union representing the men
18 expected to work these hours, is that what you are
19 driving at?

20 MR. BAYLY: Yes, sir.

21 THE COMMISSIONER: Well, I
22 think that is a reasonable question. It is simply a
23 matter of whether it was taken into consideration,
24 was it, Mr. Dau?

25 WITNESS DAU:

26 A I still do not quite
27 understand what the question is.

28 THE COMMISSIONER: Well, as
29 I understand it, let me just tell you what I understand
30 we are talking about here, for what it is worth, it may

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 not be a great deal, you have to get people to build
2 this thing, welders and so forth; presumably they
3 belong to a trade union. We are going to reach this in
4 phase four and the pipeline guidelines give us quite
5 a lot of work to do in this regard.

6 Now, presumably you have
7 to have a collective agreement that agrees to all of
8 these hours just as you have to have some kind of
9 exemption from the territorial statute to allow you
10 to work these hours. You said that you took into
11 account the law, did you take into account as well
12 your establishing a construction program? The
13 necessity at some stage of getting a trade union
14 to go along with this? A trade union, maybe a
15 group of them, we do not know, I do not know.

16 A Yes, it has always been
17 part of the plan. I do not think it can be built unless
18 you had such an agreement and it -- there is going to--

19 Q Well, you took it into
20 account in the sense that you proceeded on the assumption
21 that you would get such an agreement?

22 A That is correct, sir.

23 MR. BAYLY: All right, I would
24 like to move.

25 THE COMMISSIONER: We should
26 talk to the mayor of Montreal.

27 (LAUGHTER)

28 MR. BAYLY:

29 Q Now, Mr. Williams, on
30 a similar part of the working hours question and the

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Cross-Exam by Bayly

1 keeping on schedule question, I believe you stated in
2 your examination in chief that -- I am sorry, I
3 think that it was one of your cross-examinations, that
4 should you get behind that by working longer hours or
5 by having extra shifts that you might be able to
6 catch up, do you recall saying something of that
7 kind?

8 WITNESS WILLIAMS:

9 A Yes, sir.

10 Q Now, do the camps that
11 are projected have accomodation for extra personnel
12 that might be required to give the manpower for these
13 extra shifts?

14 A Again, Mr. Bayly, if
15 we are speaking of the Yukon coastal plain area
16 that is constructed in the third winter, there is
17 a considerable amount of surplus camp equipment available
18 in that year because there are fewer spreads, fewer
19 ancilliary crews working than in the previous two
20 years. So, in that case, equipment would be available
21 to enlarge the camp if necessary.

22 Q Now, let me give you this
23 as an example, Mr. Williams, I believe the camp near
24 Aklavik is projected to have 800 men at it, is that
25 correct as kind of a round figure?

26 A Yes, sir.

27 Q All right, now, when
28 I looked at the sheets that were distributed on the
29 Aklavik spread and do you have those before you,
30 sir?

Dau, O'Rourke, Williams
Cross-Exam by Bayly

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Now, when I look down in the right hand side of that, that is years 1979/1980, and counted up the number of men that appeared to be there all at the same time, even though there is some overlap, it came to 883. I started up at the top of that where it says 45 man months for 10 men and worked my way down the sheet concluding at 62 men for 170 man months.

A By adding the ten, the 55 and the 594 and the 62 I get 711.

Q All right, what about the 162?

A That is the crew installing the compressor station and they would have their own camp.

Q They would not be at the same camp, is that what you are telling me?

A They would be at the same location at the same time, but the compressor station crew would be housed separately at a separate camp.

Q That then is not included in your 800 man camp, that is included at the same spot but in a separate set of buildings, is that correct?

A Yes, sir, when we refer to generally an 800 man camp, that is for pipeline construction.

Q Now, assume you get

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Cross-Exam by Bayly

1 behind in that area and have to call for men from
2 a spread which is finished ahead of schedule or
3 ahead of schedule, but not finished, do you have
4 accomodation for, how many men do you have accomodation
5 for at that camp so that you could call in men from another
6 area?

7 A Well, generally, Mr.
8 Bayly, we try to have the spreads run towards each
9 other so that if the adjacent spread was ahead of
10 schedule, he would continue on working towards the
11 spread that was behind schedule and would stay in
12 the camp at his own location.

13 Q So this would not be
14 a question of borrowing men, it would just be a
15 question of one spread doing more miles in total than
16 the other one, or more miles in total than they thought
17 they were going to do?

18 A Well, it can work either
19 way. If you want to supplement a crew, you could move
20 part of that camp in that -- when the spread is
21 finished, to supplement the crew that was behind, or
22 you could have them work out of the same camp -- there
23 is some flexibility there.

24 Q All right, and in size
25 of camps, is there that flexibility that would allow
26 you to house extra people should you feel you required
27 them?

28 A Not large numbers,
29 but some, yes.

30 Q Could you give me an idea

1 of the percentage, perhaps of extra capacity that you
2 might have?

3 A No, I do not have that
4 here.

5 Q Has that been figured
6 into the calculations for the number of buildings,
7 for example, that you would order for a camp?

8 WITNESS DAU:

9 A We have not done it
10 in detail, sir.

11 Q Would you anticipate
12 doing it so that there would be accomodation for
13 extra people because of these contingencies that
14 Mr. Williams has mentioned?

15 A Absolutely.

16 Q And based on other
17 pipelining jobs or other similar jobs, can you
18 give me an idea from your experience of what sort
19 of percentages, perhaps bracketing percentages that
20 you would normally use to make sure that you had
21 sufficient camp capacity?

22 WITNESS WILLIAMS:

23 A Usually if you fall
24 behind schedule it is one feature of the work that
25 is a problem, Mr. Bayly. It might be as you suggested
26 earlier, excavating ditch, that might fall behind or
27 the welding operation might fall behind, so it
28 would not be a general escalation of the whole crew,
29 it would be increasing the one feature of the spread
30 that was in trouble and should not be that large a

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 number, you know, 20 welders, for instance, is a
2 lot of production.

3 Q So you really feel that
4 you could not say at this point how much more capacity
5 you would build into your camp system to facilitate
6 these contingencies?

7 A No, sir.
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Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 Q Now as I understand from
2 the reports on which you rely, with regard to the
3 handling of waste products, that generally speaking
4 in the large camps you will be using a secondary
5 sewage treatment, is that correct?

6 WITNESS DAU: I believe that's
7 correct, sir, yes.

8 Q Now, I wonder if you
9 could describe the various kinds of sewage treatment,
10 unless you, sir, are aware of the various levels of
11 sewage treatment that can be made? I gather there is
12 no treatment, primary, secondary, and tertiary
13 treatment that in engineering terms those phrases are
14 used to describe sewage treatment, is that correct?

15 A I believe so. We assumed
16 that that detail would be handled in another phase,
17 and those reports that you're referring to have been
18 prepared by Associated Engineering who will have some-
19 one, I believe it's Phase 2, to speak in detail to
20 those reports and to the treatment of wastes at the
21 campsite.

22 MR. BAYLY: I'm content, Mr.
23 Commissioner, if that is the case that we are going
24 to have someone, I had prepared an amount of cross-
25 examination on that subject based on the fact that
26 some reports on water supplying sewage treatment
27 were part of the reports on which this panel intended
28 to rely; but if they are not the experts that I should
29 be addressing to, Mr. Genest tells me he will be
30 calling these people I will leave those questions

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 until a later stage.

2 THE COMMISSIONER: I think
3 you should leave them until Phase 2.

4 MR. GENEST: Well, that's where
5 we had intended to treat them, sir. I use the word
6 "treat".

7 MR. BAYLY: Secondarily.

8 THE COMMISSIONER: That is
9 something we can look forward to.

10 MR. BAYLY: Could one of the
11 members of the panel, and perhaps it's you, Mr. Dau,
12 describe the duties of what you have referred to in
13 your prepared evidence as the environmental inspectors?

14 A In my view, they would
15 provide expert advice in the areas of wildlife, for
16 instance, whether it's fish or birds or mammals. They
17 would be specialists especially trained in those
18 particular fields. Their exact duties I can't quite
19 decide exactly what they're going to do. They would
20 be inspecting the work of the contractors to make sure
21 it followed whatever guidelines there were, whatever
22 specifications there were with respect to environmental
23 matters.

24 Q Now, if the camp and
25 spread employes six or 700 men at a time, how many
26 environmental monitors would you envisage being
27 required so that you could keep track of what was
28 going on?

29 A Just one moment. I
30 don't have it in detail by camps but when we were

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 last here we provided an estimated manpower requirement
2 for the construction manager-owner, and engineer in
3 the winter of 1978-79, which was the peak year, and in
4 that total for that year we had 150 environmental and
5 geotechnical inspectors. If there were approximately
6 ten locations, so that would be 15, but I do not have
7 a breakdown between environmental and geotechnical.

8 Q Now, if you had 15 and
9 we assume that some of them are geotechnical people
10 as well as environmental people, if they are environ-
11 mental people I assume that a person who is an expert
12 on fish is not necessarily an expert on mammals. Would
13 you envisage having one for each species, or one for
14 each broad classification of wildlife or plant life,
15 or has this been something that you have been in on
16 the discussions on?

17 A I have not considered it
18 in that amount of detail at all, sir. I suspect -- I
19 am pretty sure that you could find people that would
20 be qualified in more than one area.

21 Q So you envisage having
22 perhaps some experts but people who have a general
23 knowledge of the environment rather than a specialized
24 one on a single species or perhaps even a single
25 area.

26 A I would suspect that
27 you'd have both, sir.

28 Q Could we move on then to
29 the other creature that you talked about in your
30 prepared evidence, which was a socio-economic monitor?

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Cross-Exam by Bayly

1 What do you envisage by socio-economic monitor? Who
2 would he likely be or she likely be, and what would
3 they be doing?

4 A I would think that they
5 would provide advice with respect to the -- any contacts
6 or any involvement with the northern communities or
7 in the general area. Again I can't tell you exactly
8 what their duties would be.

9 Q All right. Then I can
10 assume that you weren't in on the decision, if there
11 has been one, as to just what these people would be
12 doing?

13 A I have not, sir.

14 MR. GENEST: Mr. Horte will
15 be testifying to that.

16 MR. BAYLY: Now, on page
17 20 of your prepared evidence you talked about construc-
18 tion worker training programs. Perhaps you'd like to
19 refer to that prepared evidence.

20 A What page, sir?

21 Q Perhaps I've got the
22 wrong page. Yes, I have the wrong page. Rather than
23 trying to find it, perhaps you remember Mr. Dau refer-
24 ring to --

25 MR. GENEST: Mr. Bayly, what
26 was the subject?

27 MR. BAYLY: Construction workers
28 training programs.

29 A I remember referring to
30 it.

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 MR. GENEST: I think it's on
2 page 7.

3 MR. BAYLY: Page 7, I believe.

4 A Yes sir.

5 Q Now, it is point 7 on
6 page 7 of your prepared evidence, and --

7 MR. GENEST: Mr. Bayly, you
8 notice that the last sentence of that says that:

9 "These programs will be dealt with by later
10 panels."

11 I wonder if, we have fairly detailed presentation to
12 make on training programs in general, and this one
13 in particular. I wonder, sir, if that may not be
14 deferred?

15 MR. BAYLY: I would be quite
16 happy to defer it. I'm not going to go into detail.
17 I wonder if I could ask one question on it as it did
18 come out in the prepared evidence, and that is do
19 you envisage, Mr. Dau, that this is directed towards
20 workers coming from the south rather than Indians or
21 Eskimos, for example, who might be employed on the
22 project?

23 A Yes, I would think it's
24 primarily aimed at people who would be moving into the
25 area.

26 Q This would be different
27 then from the training programs that have been estab-
28 lished for training native peoples in the north to
29 do work on proposed construction, is that correct?

30 A That's my understanding,

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 sir.

2 Q Yes. That's the only
3 question I have in that area and I'll defer the others
4 until that other panel. I'm assuming, Mr. Commissioner,
5 that that will be in Phase 4.

6 Now, Mr. O'Rourke, I'd like
7 to ask you some questions, if I may now, about trans-
8 portation and the logistics of transportation. You
9 have stated in earlier parts of your examination in
10 chief and cross-examination that if pipe were to come
11 from Japan, or from the West Coast of Canada or the
12 United States, that it could be barged economically
13 no farther than Arctic Red River. Is that correct?

14 WITNESS O'ROURKE: I don't
15 think it's so much a case of economics as a preference
16 by the operators not to go upstream against the
17 tough water conditions beyond Arctic Red River.
18 I don't think we really did define the economic bound-
19 ary. We looked more at the practical limitations.

20 Q If this is then the
21 practical boundary, could you envisage Arctic Red
22 River being a major staging area if sufficient quantity
23 of pipe had to come up to the delta and then up-river ?
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Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 A Let's see, which route
2 is it you're referring to now, Mr. Bayly?

3 Q I'm thinking of the
4 prime route and I'm thinking of pipe coming from
5 Japan or perhaps the West Coast, if that turned out to
6 be an economical place to bring pipe off land onto
7 water.

8 A As regards the prime
9 route, Arctic Red River the village itself would not be
10 used because it's on the wrong side of the river soto speak
11 The plan does call for a stockpile to be established
12 at mile 902 or 905 on the river, which is -- I don't
13 have a map in front of me but it may be ten miles
14 down-river and across the river from Arctic Red.

15 Q All right, now if this
16 is not then to be a staging area right in the town, I
17 gather it is adjacent to it but on the opposite side
18 of the river, is that correct? And downstream --

19 A Down stream and on the
20 other side of the river, yes.

21 Q All right, now you referred
22 in the evidence you gave today as a supplement to your
23 evidence, to trucks having to go through Arctic Red River.
24 Do you mean through the area of Arctic Red River, or
25 through the village itself?

26 A At that point, Mr. Bayly
27 I was referring to a barge to truck transfer operation
28 that would be established with regard or in relationship
29 to moving materials into the Yukon, and this applies
30 to the construction of the alternate system through the

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 interior of the Yukon. That particular site, we haven't
2 defined precisely but we have selected it on paper, if
3 you will. It will be in the vicinity of where the
4 Dempster Highway comes to the west bank of the Arctic
5 Red River, and it by that process would be removed a
6 few miles from the village.

7 Q So these 50 to 70 trucks
8 would not be going through the village but would be
9 going from the stockpile site to points --

10 A Points west.

11 Q -- west and north-west?

12 A Yes sir.

13 MR GENEST: That's only if
the interior route is used.

14 MR. BAYLY: Yes, I understand
15 that from Mr. O'Rourke's testimony.

16 Q Now, do you envisage if
17 the interior route is chosen, stockpiling at both
18 Arctic Red River and at Fort McPherson?

19 A Again I have to remind
20 you that in the plan that was filed, saw the pipeline
21 materials coming up from the south, and Arctic Red
22 River didn't come into the picture at all. In the
23 plan that C.N. and C.P. came up with, Arctic Red River
24 -- the general area, if you will -- had a barge-to-truck
25 transfer point established but no stockpiling. The
26 materials would go direct from barge and when the
27 trucks were loaded they would move on, westward along
28 the highway to three points, one of which would be what
29 we referred to as RMP-950. It's a stockpile point along
30 the Peel River north of Fort McPherson.

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 Q Where would the people
2 live that operated these trucks and helped load and
3 unload the barges and trucks? Do you have any projection
4 of that?

5 A We haven't set that down
6 in our plans, no.

7 Q Because you've talked
8 today about having 50 to perhaps 60 people involved
9 in this operation, is that correct?

10 A Yes sir.

11 Q I assume that not all of
12 those are truck drivers but that some are people who
13 load and unload equipment?

14 A Crane operators, forklift
15 operators, yes, general handlers. To be quite honest,
16 in our finding we didn't spell out campsite, if you
17 will, for those people.

18 Q Is this something that
19 perhaps Mr. Dau or Mr. Williams know anything about? The
20 camp facilities for people bringing in equipment into
21 the Arctic Red River area?

22 WITNESS WILLIAMS: I would
23 say they would be accommodated at the stockpile campsite.

24 Q That would be right at
25 the stockpile itself, Mr. Williams?

26 A Yes sir.

27 Q Thank you. Mr. O'Rourke,
28 I wonder if you could be supplied with Volume 33 of
29 the transcript? I'll be referring to some of your
30 evidence in chief.

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1
2 To page, to begin with
3 to page 4258, at line 15 -- I'm sorry, I'll go to the
4 question, line 11. If I could -- do you have that
5 volume, sir? Would you like to have it?

6 THE COMMISSIONER: No, I don't.
7 If you're just reading, I can follow you.

8 MR. BAYLY: I'm reading from that
9 volume then; beginning to read the question at line
10 11.

11 "Q I just wanted to talk about the Mackenzie
12 Highway for a moment, as discussed in the
13 logistics section. What use of the highway
14 is contemplated in the logistics plan that
15 you have worked on?

16 A O.K., the plan that we have evolved at this
17 point in time based on prices that we have
18 received from the various carriers both
19 rail -- well, not so much rail, but barge
20 and truck -- leads us to conclude that
21 the barging carrier will be the major one
22 used. In our planning we have let the
23 assumption stand that the Mackenzie Highway
24 would be complete to Fort Good Hope by the
25 time we wanted to start moving materials
26 down-river, and the selection process, if
27 you will, that picks on the barging route
28 is based entirely on the cost of moving
29 materials into the construction stockpile,
30 barging seems to be the preferred method

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 on the basis of cost."

2 In that answer, Mr. O'Rourke, you talked about -- you
3 say at lines 17 and 18, you say:

4 "Both rail -- well, not so much rail."

5 Do you mean rail to Hay River, or ^{when you say} / "not so much
6 rail" do you mean rail to Edmonton?

7 A No, the reason I
8 rejected rail was that we were talking in the context
9 of materials moving beyond the end of rail.

10 Q Yes.

11 A When these materials
12 got to the Hay River enterprise area you had a choice
13 of moving them by two modes, one water and the second
14 one is highway.

15 Q Now, if we can follow
16 that up and refer again to the transcript at page 4259.
17 I'll start at the question that follows up your
18 answer. I'm leaving out about two questions, sir, but
19 I think it can be understood without my having to read
20 them.

21 "Q Well, it's complementary use both,"
22 referring to highway and you barging.

23 "A It's complementary, but again mainly on
24 the basis of economics, trucking as far
25 as Fort Simpson is a better alternative.

26 Q So north of Fort Simpson where the highway
27 is planned to go, what does your plan con-
28 template using?

29 A Right now we plan on using barges."

30 Do I understand from that, Mr. O'Rourke, that your

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 barges, is that correct?

2 A Yes, in theory yes, you
3 could. It would require trucking by rail over to
4 Fort Simpson, though, and it would require having to
5 have your barging equipment stored in some fashion in
6 Fort Simpson.

7 Q It would be possible,
8 though, would it not, using that system, to take
9 material by rail to Fort Nelson and take it down the
10 Liard by barge?

11 A It's possible to take the
12 material Fort Nelson. I am not really convinced
13 that you could move great materials down the Liard
14 river by barge. Certainly there is a barging activity
15 on there, but I think it's my understanding this is
16 a relatively shallow draft operation. The barges that
17 operate on there, their capacities are in order of
18 maybe 3 to 500 tons.

19 Q So you would envisage
20 not using that route, or using it partially; or have
21 you considered the possibility of using a large
22 number of routes?

23 A Using the Fort Nelson
24 route?

25 Q Yes.

26 A At one time in some of
27 the work that we've done in the past we did see the
28 route being used through Fort Nelson, but what we did
29 -- the way we used it was not so much combining it
30 with the river system but combining it with the snow

Dau, O'Rourke, Williams
Cross-Exam by Bayly

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30 with the river system but combining it with the snow

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 road, the winter trail that runs from Fort Nelson over
2 towards Fort Simpson. We saw this as a possibility.

3 Q Now, I am unclear as to
4 whether when you've been discussing transportation
5 methods you've been talking in alternatives or about
6 combining the use of various routes to get the equip-
7 ment to where you want it on time. Would you envisage
8 using a combination of routes?

9 A I think, yes we do.
10 I see your point. We do use a combination of modes
11 and again it depends on the prices that you get from
12 the carriers. It is conceivable that you could be
13 using a combination of routes such as the one you have
14 pointed out over Fort Nelson. That is a possible
15 route; and similarly the Skagway-Whitehorse.

16 Q Now, you have said that
17 you would gain two weeks if you started barging from
18 Fort Simpson. I would suggest to you that you would
19 gain more than two weeks. You would gain two weeks
20 plus a large number of miles because you would be
21 starting earlier and also farther downstream, would
22 that be correct?

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1 A I think to operate
2 out of Fort Simpson, - you would have to establish
3 quite a transfer point and I am not sure that the
4 operators are anxious to get into this. We have talked
5 about it, but I have never really followed it up as
6 being a practical objective.

7 Q Have you written it
8 off in your own mind or is this something that might
9 with negotiation over tariffs and various rates, be
10 something that might become more reality at that stage?

11 A I can only offer an
12 opinion on this, but I think that Arctic Gas if an
13 operator came along with a good proposition they
14 would listen to it very hard. If it was in their interests
15 as far as dollars go.

16 Q So really what dictates
17 what is a major staging area may be economics that
18 have not been determined yet, would that be fair
19 to say?

20 A I am just wondering
21 what the -- I think that is a fair statement.

22 Q All right, I want to
23 be completely fair and suggest to you that from what
24 you know now, the major staging area would not
25 be Fort Simpson, but would be Hay River?

26 A Yes, sir.

27 Q So that would be based
28 on something that would come as a surprise to you ,
29 if it were changed to Fort Simpson?

30 A If it were changed to

1 Fort Simpson, I would be quite surprised.

2 Q Yes. Nonetheless, for
3 certain areas, now that is ^{south of} Fort Simpson, between
4 Fort Simpson and Hay River you would be using
5 Fort Simpson as a staging area?

6 A For points south of
7 Fort Simpson, I -- the plans are, those materials
8 would be trucked along the Mackenzie Highway. They
9 would intercept the pipeline before they got to Fort
10 Simpson.

11 Q So they would be dumped
12 at staging areas between Hay River and Fort Simpson?

13 A Yes, sir.

14 Q Yes. Now, one of the
15 things that is not gone into in your examination in
16 chief and in your cross-examination was the
17 question of handling. You have talked about rates,
18 per mile rates, but as I understand there is some real
19 costs involved in transferring materials from one
20 load of transportation to another, is that correct?

21 A Yes, sir.

22 Q And would it be fair to
23 say that wherever possible you would try to avoid
24 changing material from one mode of transportation
25 to another if it could be avoided?

26 A It is one of the cost
27 items that you put into the whole equation and sometimes
28 it might turn out that you can afford that handling
29 cost. Other times you might try to avoid it.

30 Q Now, if you were shipping

1 material, for example, by rail to Hay River and then
2 trucking some of it on the Mackenzie Highway, would
3 you envisage putting it onto piggy back type of
4 equipment so that you would avoid that handling
5 problem?

6 A We have not done that,
7 sir.

8 Q When you say that you
9 have not done that, you have not discussed it or
10 you are not going to do it?

11 A No, we did not study that,
12 we did not -- I can say that people have suggested
13 this to us as one item, one way of handling materials,
14 but we rejected it as probably requiring too much
15 equipment and the more efficient way in our view was
16 to move the pipe on flat cars and make the transfer to
17 truck at destination.

18 Q All right, and would
19 you envisage any of the material bypassing Hay River
20 completely by being loaded at Edmonton onto a
21 truck and driven down the Mackenzie Highway all the
22 way to either Simpson or one of the staging areas
23 in between?

24 A I can see that happening,
25 yes,

26 Q That would avoid that
27 handling problem, I take it?

28 A Yes.

29 Q Now, because you have
30 stated that no formal negotiations have taken place with

Dau, Q'Rourke, Williams
Cross-Exam by Bayly

1 the carriers, I take it that that means that you have
2 taken rates that are visible, that are on their tariff
3 sheets and made your estimates that way?

4 A Not exactly. I think
5 I explained in our last session that insofar as rail
6 rates are concerned, there were no published rates
7 specifically applied say to a Welland-- Hay River
8 move. So we did get a scale of rates from the rates
9 departments of the two railways and we have applied
10 those rates to get at the costs -- the cost estimate
11 of the material's movement.

12 Q And I take it that this
13 is a preliminary stage and that the real decision cannot
14 be made until you go up to a carrier and say look,
15 we plan to float this much material, what is the
16 best rate that you can give us?

17 A Yes, sir, there is a
18 lot of that to be done and as we mentioned earlier, this
19 negotiating process with the carriers has to be tied
20 in also with your materials purchasing plan. You have
21 to be able to know where the materials are coming
22 from.

23 Q So until that decision
24 is made we won't know, for example, whether the
25 Arctic Red River area will be a major staging area or
26 whether some other area will be.

27 A That is correct.

28 Q Is there any schedule
29 for when this sort of thing will be known, or is this
30 something which we would contemplate in final design

1 or --?

2 A Well, we have recommended
3 -- made our recommendations to Arctic Gas. I am aware
4 they have had some discussions, but I really don't
5 know what their own schedule is now for resolving
6 their materials purchasing plan and their logistics
7 plans.

8 Q All right. Now,
9 did you do studies, either yourself, or are you
10 aware of studies on what happens when a major
11 facility takes over something like a river or a railroad,
12 what it does to the normal supply to an area; have
13 you done studies for examples in Alaska as to whether
14 there was disruption to the normal procurement of
15 goods in Alaska because of the staging of materials
16 for a pipeline project?

17 A I have not done any
18 studies like that.

19 Q All right, and are
20 you aware of studies like that?

21 A Not specifically, the
22 only thing that applies maybe is street gossip
23 right now. The learning process is on, really ,

24 Q All right, so we do not
25 know then what the impact on other users of barging
26 systems, airplane systems, and --

27 A We try in our work to
28 as we call it, take a first cut assessment of what
29 this project, the materials movement, the impact
30 it might have on the various carriers, the railways, the

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 barge system, especially, and the deep water systems, and
2 on the railway system the impact -- in the east-west
3 direction across Canada ~~was~~ not all that great compared
4 to the traffic that is now moving. It becomes more
5 noticeable as the traffic moves north from Edmonton
6 on systems that are now relatively smaller. Specifically,
7 if I recall, we operate three trains a week on the,
8 what we call the Great Slave Lake Railway from Norman
9 junction to Hay River. The pipeline system would
10 probably put another train a day onto that workload
11 which our people are not too concerned about in
12 terms of track capacity. They would have to do some
13 juggling to get crews in place to handle it.
14 We have gone that far. The barge system we have
15 talked about in terms of having to add ~~eight~~ sets
16 of equipment.

17 Q I realize you're in
18 barges, making an attempt at self sufficiency in that
19 you contemplate as much as possible that Arctic Gas
20 would have its own -- almost own contingents of
21 barges although I assume these would be still owned
22 by ^{the} common carrier.

23 A I don't know what
24 arrangement they are going to come up with, but by
25 one manner or another that equipment would be more or
26 less dedicated to their service.

27 Q All right. --

28 THE COMMISSIONER: You said
29 that the impact of the project on the east-west rail
30 systems would be something that could be taken in the

1 stride of the two national railway systems?

2 A Yes, sir.

3 Q But that there would

4 be pressure on the Great Slave Lake Railway from

5 Edmonton to Hay River. Well, these lengths of pipe,

6 do you transport them on ordinary flatcars? Do

7 you have, on the Great Slave Lake Railway, flat

8 cars of the type and in the numbers that you will

9 need or if you do not have them, can they be obtained?

10 Do they exist within the CNR or CPR systems now?

11 You did not discuss this in your evidence and --

12 A We did, yes; the Great

13 Slave Lake Railway does not own any equipment other

14 than a few pieces of work equipment --

15 Q It is the CNR, is it not?

16 A Pardon me?

17 Q Isn't it the CNR?

18 A I believe it is now

19 in the CNR books. The government built, paid for

20 it, the CNR built it under arrangements with the

21 Government and I am not too sure whether they transferred

22 ownership into our books or not.

23 Q Well, anyway, carry on --

24 A Yes, the practice would

25 be that cars, flatcars would be loaded with pipe

26 at Welland and it would go all the way through and as

27 they passed over railways, they do not -- the loading

28 does not change from car to car. At the moment and

29 I think that we brought this out before, Canadian

30 National has 400 cars on order which would be suitable

1 for this service. They are due to start coming off
2 the production line later this year. I don't know --

3 Q Where are they being
4 built?

5 A Where are they being built?
6 In the east somewhere, but I cannot tell you where.
7 I am not aware of what Canadian Pacific has on order
8 or might be preparing to order in this line of car.

9 Q Did the CNR order these
10 special type cars for the Arctic Gas thing or was
11 this -- are these cars on order -- as part of normal
12 expansion?

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Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 A The Welland Mill was
2 going into production and our people understood this,
3 and --

4 THE COMMISSIONER: What was
5 going into production?

6 A The Welland Pipe Mill.
7 I think it's producing pipe now.

8 Q Now that's near Hamilton.

9 A Yes. Well, Mr. Genest
10 is better in Ontario geography than I am.

11 MR. GENEST: Mr. Scott and I spent
12 many happy hours there. It's in the Niagara Peninsula,
13 sir.

14 A The future need for
15 this type of car in this project, I'm sure, was -- fell
16 somewhere into the decision to buy them; but these
17 cars to my knowledge were not bought strictly for
18 this project. I think -- there was a demand for
19 additional car equipment and our car-buying experts
20 and our car-utilization experts saw that if they
21 shifted loads around from one type of car to another
22 that these cars would find their way into the fleet,
23 would be used and would be available later on.

24 THE COMMISSIONER: Now, am
25 I to take it that the C.N.R. doesn't have cars now
26 in its system that could be used to transport these
27 lengths of pipe, say from Welland to Edmonton to
28 Hay River?

29 A It's possible to handle
30 80-foot pipe on 52-foot flatcars, of which we have

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 quite a number. You use idlers to do it.

2 Q You use what?

3 A What we call idlers.

4 They're just empty cars. The convention is to couple
5 up five 52-foot flatcars and load No. 2 and No. 4
6 with overhangs on each end. The idlers are not carrying
7 anything --

8 Q Oh, idlers. Yes, I see.

9 A -- but at the time we
10 put our report together, and I think it's still this
11 way, there simply were not enough of these cars
12 available to --

13 Q The new ones or the
14 52-foot?

15 A No, the 52-footers.
16 We were saying, you know, a year or two ago, that
17 the railways would have to obtain additional cars to
18 handle this project if it went ahead.

19 Q Well, can you tell me
20 how long the new cars are, the 400 on order?

21 A They -- we refer to them
22 as 89-foot cars, and that's 89 feet over, that's the
23 deck length, if you will. They have a multiple
24 purpose built into their design. We can use them
25 in container service. We can use them in pipe service.
26 We move a few loads of long poles, we can put them
27 in that service. There are a number of opportunities
28 that these cars could be used, and you just reorganize
29 your fleet. They're not coming off the line to sit
30 idle and wait for this project.

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 Q Now, in planning the
2 logistics for supplying the project of this size,
3 have you taken into consideration the possibility that
4 the demand for and the supply of goods for the pipeline
5 -- and I don't mean just pipe, but the various goods
6 that go to camps, etc. will mean shortages or lack of
7 things to some of the settlements and towns down the
8 Mackenzie River?

9 A No, I think -- I guess
10 there are two parts to that question. One is -- would
11 be the movement of materials by the land systems, either
12 highway or railway to Hay River. The second part would
13 be from Hay River downstream by barge.

14 Q That's correct, yes.

15 A Now I think we talked
16 about the fact that on the barge system we have
17 assumed all along that whatever is there today is
18 needed to handle the existing work load and it will
19 expand as that existing work load grows.

20 On the land portion, insofar
21 as the highway and railway equipment goes, and how
22 handling the pipeline materials with the existing
23 plants might work back on other communities, no, we
24 have not done that. I think the chain effect can be
25 felt so far and wide that it would be very, very
26 difficult to pin down.

27 Q Let me suggest an
28 example to you, Mr. O'Rourke. If you are shipping
29 a large number of men back and forth to camps by
30 airplane, by commercial airplane, I assume they will

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 take up a large number of the available seats. Now
2 this will mean that people who would normally make
3 reservations would either have to make them a long
4 way in advance or won't get onto the airplane. I
5 believe that's already happening, just with the hearing,
6 let alone with the pipeline. This is the kind of
7 thing that I envisage as happening, and could you
8 make a comment as to whether you would -- the
9 spin-offs would be that kind of thing?

10 A We discussed this with
11 Pacific Western Airlines and it was their opinion that
12 with the number of aircraft they had on order at the
13 time and their ability to obtain other aircraft, on
14 relatively short notice, that with some proper planning
15 if they sat down with the construction manager or
16 his agent they could arrange to utilize these aircraft
17 in the movement of construction personnel in large
18 measure at times when the aircraft were standing still
19 anyway. They are quite aware of -- I shouldn't
20 say that -- might have been standing still, O.K.
21 They foresaw this as a problem that would have to be
22 avoided. But they were confident that they could do
23 it.

24 Q All right now, I would
25 assume as well that a project like this will invariably
26 forget things and have to have them shipped in by
27 air.

28 A Yes sir.

29 Q Now, as I understand it,
30 an airlines makes more per pound for freight than it

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 does on passengers; is that correct?

2 A I am not knowledgeable
3 enough to answer that yes or no .

4 Q If that were the case,
5 I'm envisaging again another scenario, that perhaps
6 there would be a large number of planes with larger
7 and larger freight areas and smaller and smaller
8 passenger areas. Can you comment on that as a
9 possibility?

10 MR. GENEST: Mr. Commissioner,
11 you know Pacific Western Airlines is a public carrier
12 regulated and under duty to provide a sufficient
13 service. I don't know whether we've been getting it.
14 Somebody should take that up with the regulatory
15 authorities.

16 MR. BAYLY: Mr. Commissioner,
17 all I'm suggesting is that we do have here an
18 expert in the logistics of moving things around, and
19 I am trying to suggest to him that some of the problems
20 that arise when a huge project like this ^{gets going} /are that
21 priorities of carriers changed and that emergencies
22 which will arise may cause impacts on the community
23 that may or may not have been assessed. If I can
24 suggest to you, Mr. O'Rourke, this kind of affect
25 may not have been assessed by you or the group that
26 you are working with as yet. Is that correct?

27 A I don't think it has
28 been assessed by us. I don't think we were asked to
29 assess it to that extent in the work that we've done
30 so far. I suspect that Arctic Gas

Dau, O'Rourke, Williams
Cross-exam by Bayly

1 within their own organization, fine-tuning their plans
2 if you will, are going to be paying attention to these
3 features as they proceed.

4 THE COMMISSIONER: Mr. Bayly
5 said something about it being cheaper to carry freight
6 pound per pound than people on the airlines, and you
7 didn't know the answer to that. The experience of the
8 railways has been that it is cheaper, I take it, to
9 carry freight than to carry people.

10 A Yes, I think we much
11 prefer to carry freight than carry people.

12 Q Yes, and this is -- Mr.
13 Bayly seems to be worried about the airlines following
14 the same historic precedent the railways^{have}/set, but
15 the airlines were there to take the people that you
16 didn't want to carry.

17 A If I could --

18 Q And I think the Air
19 Transport Board or whatever it is can probably safe-
20 guard the interests of the travelling public with
21 regard to the airlines.

22 A Well, I hope so.

23 Q There being no other
24 form of transportation.

25 A Well, I think that the
26 owner is going to make sure that the service is there,
27 as well. If I could just observe, there are very
28 few of the 737's in Pacific Western's fleet that
29 are presently equipped with side doors and whatever
30 for handling freight.

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 Q Very few equipped to what?

2 A With that large side
3 opening door for handling the palletized freight. It
4 could probably handle something down below, but I, you
5 know, I think I agree with you that there are going to
6 be slip-ups and there are going to be some foul-ups,
7 if you will. Nothing is going to be perfect. But I
8 think that the planning process that Arctic Gas is
9 continuing on is going to try to minimize these
10 as much as possible.

11 Q Well, while Mr. Bayly
12 and I are in the process of charting the future of
13 the country's transportation systems, can I just
14 ask you a couple of things? That railway to Hay River,
15 you have never carried passengers on that railway,
16 have you?

17 A Not that I am aware of,
18 sir.

19 Q In the expansion of oil
20 and gas exploration activity in the north, the pressure
21 on the P.W.A. flights appears to have been diminished
22 by the fact that the oil companies have their own
23 aircraft, they have their own airlines, in a sense,
24 they have their own aircraft that they fly up and down
25 taking crews up and down. Was that a matter that was
26 considered at any time by Arctic Gas, that is that it
27 would have its own fleet of aircraft, in the way say
28 that Imperial has, or Gulf, Shell? Can you tell me
29 about that while we're on the subject? Look at that
30 piece of paper, whatever it is.

Dau, O'Rourke, Williams
Cross-Exam. by Bayly

1 A Mr. Dau has pointed out
2 a sentence here, if I can read it?

3 Q Yes.

4 A "In order to insure
5 availability of air transport the applicant is prepared
6 to lease or charter large jet aircraft to service the
7 winter construction seasons. It is expected that arrange-
8 ments could be made with the regional carrier or other
9 operators now serving the project area to provide
10 additional transportation at peak periods noted
11 above."

12 Q Well, That means they
13 might or might not -- wait and see.

14 A to get back to your question,
15 I have not heard anybody suggest that Arctic Gas
16 will start up its own airline.

17 MR. SCOTT: It sounds like
18 a good retirement job for Mr. Marshall.
19 (LAUGHTER)

20 MR. GENEST: We have been
21 trying.

22 MR. MARSHALL: To retire me?

23 MR. GENEST: No.

24 THE COMMISSIONER: I do not
25 know how much longer we can last, Mr. Bayly, but
26 carry on.

27 MR. BAYLY: I do not know
28 if that is directed at me or Mr. Marshall.

29 Q Now, Mr. O'Rourke, getting
30 back to the airlines question, have you done projections

Dau, O'Rourke, Williams
Cross-'Exam by Bayly

1 as to how much of PWA's, say, present capacity you would
2 require for both freight and passengers in this proposed
3 project?

4 A I could dig up some numbers
5 but if I could just speak generally, when we talked
6 with Pacific Western, this would be over a year ago,
7 we gave them an estimate of the manpower, the movements
8 that could take place, the rotation throughout, the
9 groceries and emergency parts replacement tonage that
10 would have to be taken up and at that time they were
11 in the process of adding additional equipment to
12 their fleet and their answer was with regard to the
13 numbers that we gave them that they would either
14 handle it with the aircraft they had on order or they
15 would bring in additional aircraft to handle it.

16 Q They felt in other words
17 that they would have the capacity to do it?

18 A Yes, sir.

19 Q Now, have you done
20 studies, Mr. O'Rourke, or are you aware of studies
21 about costs of transportation and how they are affected
22 by a major project like this? I am assuming, for
23 example, that N.T.C.L. if they supply these totals
24 that Mr. Bell was referring to, will have to go into
25 capital expansion and have to go and borrow money and
26 this sort of thing, are you aware of whether this
27 kind of project causes rates to go up?

28 A Causes rates to go up?

29 Q Yes, because of a large
30 amount of transportation facilities that it requires?

Dau, O'Rourke, Williams
Cross-Exam by Bayly

1 A I am really not aware --
2 we have not studied that.

3 THE COMMISSIONER: Rates to the
4 customer, or rates to borrow money?

5 MR. BAYLY: Yes, rates to
6 the customer, freight rates.

7 A I am not sure what
8 would cause them to go up. I guess that is because
9 I have not studied that.

10 Q So there has been no
11 study to your knowledge of whether, say, in Alaska
12 the freight rates went up because so large a segment
13 of the transportation facility was mobilized and
14 re-equipped or additionally equipped to reach the
15 capacity required?

16 A I am aware that some
17 of the rates in Alaska particularly in the trucking
18 industry have gone up a bit. As you may know, the
19 Alaska railroad is regulated, they cannot put their
20 rates up for that kind of reason.

21 Q All right, would that
22 apply for example, to barging systems and Canadian
23 railroads and airlines, would they be free to put
24 their rates up if they felt they needed to to re-equip
25 this sort of thing? You see, Mr. Commissioner, Mr.
26 Genest is shaking his head, I do not know whether that
27 is an objection or not.

28 MR. GENEST: I was going
29 to object but I stifled it. I will see if Mr.
30 O'Rourke can handle it.

1 A Now, I think if we
2 take one load at a time, insofar as the railways
3 are concerned, they are constantly getting new
4 tonnage thrown at them and they are constantly adding
5 to their plant and facilities to cope with this tonnage.
6 And except for incorporating in their costs which go
7 into the rate making process, a reflection of rising
8 labour and material costs, but I do not think that
9 they, again I have got to refer to the fact that I
10 have already said once, I am not a rate expert, but,
11 I am not sure whether they would put in what you might
12 call an opportunity rate. It might be done and it
13 might be a plane everyday thing done in a variety
14 of circumstances. I am not sure that you could tie
15 it specifically to this one project. As regards
16 the barging operation on the river, well, we have
17 always used the published tariff for barging activities
18 in order to obtain a cost estimate and we have
19 also indicated the cost of the additional barges
20 and tugs that would have to be purchased and that
21 some arrangement would have to be arrived at between
22 Arctic Gas and the barging operators for the provision
23 of this equipment and this cost would be over and
24 above the published rate that we were using.

25 Again, I am not sure that I
26 would foresee the operator putting on a rate that would
27 be exorbitant or whatever term you want to use because
28 it is a big project that takes a lot of its time.

29 Q You are suggesting
30 though that there might be the occasional opportunity

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1 rate, as you called it --

2 A But I think that **this**
3 is an ordinary thing in business.

4 Q All right, but an ordinary
5 thing that this -- that might happen here --

6 A No, well, what I cannot
7 comment on is the magnitude.

8 Q Yes, and you are not able
9 to point us to studies where magnitude may have been
10 forecast?

11 A No, and nor am I familiar
12 with what Artic Gas's negotiating position will be
13 when they go and offer large block of tonnage to a
14 carrier who wants it.

15 Q Now, is it within the area
16 of expertise of you, Mr. O'Rourke, or perhaps other
17 members of the panel, about what sort of steel scarcities
18 that might cause, in the production of 2,000 miles of
19 pipe and 400 railway cars and the various barges, do
20 you know ^{of} studies of that kind of logistic?

21 MR. GENEST: Well, Mr.
22 Commissioner, I think that is a question
23 is south of 60 -- I do not know whether it is relevant
24 in terms of the inquiry of this Commission.

25 THE COMMISSIONER: What do
26 you say to that?

27 MR. BAYLY: Well, Mr. Commissioner,
28 'it may not be relevant to the supply because we do
29 not process steel in the Northwest Territories, but
30 we do use it for a large number of things and as the

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1 supply of steel might be used up by Arctic Gas, it might
2 mean that other projects going on in the Northwest
3 Territories would have to suffer because of that. That
4 is an impact which this project might well cause.

5 THE COMMISSIONER: Well, that
6 may be and it may be that we will get to that in
7 phase four. I said in my rulings that any special
8 impact on the Northwest Territories or the Yukon would
9 have to be taken into account, but you really cannot
10 expect Mr. O'Rourke to discuss this, can you, he is
11 not an economist -- maybe he is an economist, but he
12 did not present himself as one, as I recall --

13 MR. BAYLY: I am quite willing
14 to let that go.

15 THE COMMISSIONER: Logistics
16 is his bag, and I think we should -- let's get into that
17 when the time comes and do it properly. So we can
18 confine ourselves to the appropriate area.

19 MR. BAYLY: Now, with regard
20 to the staging areas, now, you have answered various
21 questions from Mr. Bell about dredging, is it con-
22 templated that it will be necessary to dredge certain
23 areas where you would stage materials in order to
24 get your heavier, or deeper draft barges in close
25 enough to shore to load and unload?

26 A This has not been
27 part of our assignment.

28 WITNESS DAU:

29 A There could be some
30 isolated cases, we are not aware of it. We have a

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1 program underway this summer on detailed investigation
2 of the dock and wharf sites. There could be minor
3 excavations near shore to allow the barges to get
4 into a dock area, but nothing extensive at all.

5 Q Now, if we could turn to
6 the construction itself and the question of revegetation
7 of right-of-way and perhaps even winter roads if that
8 is required, in your example of the construction method,
9 one of the things that you had talked about was removing
10 the tundra mat in those areas where there is tundra and
11 replacing it over the area where it was removed from
12 after the pipe has been put into the ground.

13 Now, one of the things that
14 has puzzled me and perhaps you, Mr. Dau or Mr.
15 Williams can comment on this, is how will it fit over
16 a berm if a berm is to be constructed.

17 A How would it fit over the
18 berm?

19 Q Yes, I am assuming you
20 take a tundra mat, the width of the ditch off and you
21 put it in a safe place and then you put it back on.

22 MR. GENEST: Do you mean
23 a spoil mound or a built up berm?

24 MR. BAYLY: Yes, I am referring,
25 Mr. Commissioner, in the term "berm" to that mound that
26 is placed on top of the pipe which comes above the
27 level that the ground used to be at before the ditch
28 was dug.

29 THE COMMISSIONER: Well, what
30 you say would apply equally, I suppose to a berm as

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1 well would be -- but anyway, we know what we are
2 talking about here, so --

3 A It is not the intent
4 that that tundra removal process, if it is used, that
5 the tundra would come off in one mat undisturbed. It
6 will have to be excavated and in fact will be chewed
7 up and dug up. It will be in small lumps rather than
8 a big wide mat.

9 Q So it will not be
10 treated as turf, so to speak.

11 A No, not at all, sir.

12 MR. BAYLY:

13 Q So what it will be is
14 a mass of roots and plant matter --

15 A Yes, sir --

16 Q -- that will be replaced,
17 I suppose more thinly over a berm than it would if
18 there is not one?

19 A That would be correct.

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1 Q I'm thinking of your
2 winter construction and the replacing of the spoil mound.
3 Now, and I am correct in assuming that when the wheeled
4 ditcher has dug it's ditch, that it spaws out fairly
5 fine material on to -- that forms the spoil mound?
6 With the exception of course of the rocks that may be
7 in it?

8 A Fairly fine?

9 Q Fine, as opposed to
10 coarse.

11 A I would define it as
12 coarse. There would be pieces that would be several
13 inches in dimension.

14 Q All right. And in
15 blasting I am assuming that the pieces might be even
16 larger, or some of the pieces might be even larger?

17 A Yes sir.

18 Q And these would all be
19 frozen?

20 A Yes.

21 Q Now, when it's replaced
22 will these be pulverized, or will they be replaced in
23 lumps?

24 A There would probably have
25 to be some processing to the frozen material that was
26 blasted and excavated with back-hoes, as it undoubtedly
27 be relatively large lumps. The excavation from a
28 trenching machine would not be necessary to process
29 that, in my view.

30 Q Now, in the interim

1 between the ditching or blasting and placing of the spoil
2 mound beside the trench, I am assuming that at some
3 point , snow will either fall or be blown in to this
4 mound? Will the snow somehow be removed from it, or will
5 it be replaced into the ditch along with the spoil?

6 A Any that blew into the
7 mound would be placed into the ditch.

8 Q And do you envisage any
9 problems with that melting out in the springtime?

10 A No sir. It will melt
11 and there would be some subsidence as a result of that
12 melting.

13 Q Now, I am assuming then
14 that we will -- if there is a berm or even if the trench
15 is leveled off flush with the rest of the ground, that
16 there will be fairly lumpy material on the trench area
17 of the right-of-way, is that correct? It's not going to
18 be like a fine-grained sand?

19 A No, that's correct. Yes,
20 okay. I agree, its not a sand.

21 Q All right, and on top
22 of that will be placed the ground up tundra mat, as it
23 has been called, which really isn't a mat, but --

24 A If that process is used.
25 We're not-- we have some programs under way to determine
26 whether that's in fact the proper method. I believe
27 we've said that in areas where it's feasible and appropriate
28 we would do that. But there is a research program on
29 to just see how effective that is.

30 Q Would you envisage the

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1 necessity of doing any summer or spring work on the
2 replaced spoil, in order to smooth it out? Either to
3 replace the tundra mat on it, or to revegetate it?

4 A There could be some
5 seeding done at - - in the summer, in the spring or
6 summer.

7 Q But as to the actual
8 material which has been dug out, you wouldn't envisage
9 a treatment of that with either hand-work or machine
10 work?

11 A Not with machine, no
12 sir. There could be some minor handwork, if there was
13 unusual problems of erosion, or something.

14 Q I understand that the
15 seeding that has been done experimentally has been
16 from helicopters, is that correct?

17 A Both helicopters and
18 fixed wing, and by hand also.

19 Q Now, I'm referring to
20 the seeding report, 403, and is referred to as one of
21 the reports on which this panel relies. And that was
22 a report based on some aerial seeding I believe done
23 from helicopters in late June of 1973. Is that correct?

24 A I believe so, yes, June
25 '73.

26 Q Would you contemplate
27 doing aerial seeding if any were done in the month of
28 June? Is that the best month to do it?

29 A I think that's a question
30 to be better asked to the environmental panel when we

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1 will have our botanist here. Frankly I don't know what's
2 the best month to seed.

3 Q So, beyond the four
4 corners of that report you don't know whether that was
5 just done at a nice time of year, or the best time of
6 year?

7 A I don't know sir.

8 MR. GENEST: I think Mr.
9 Gibbs can probably tell us.

10 MR. BAYLY: A country boy?

11 MR. SCOTT: Mr. Commissioner,
12 it's five-thirty, and we are at the stage where all
13 persons at the counsel table laugh every time an answer
14 is given, and laugh every time a question is asked. I
15 think it might be/national hockey psychosis should be
16 allowed to overcome us.

17 THE COMMISSIONER: Well, I
18 guess we can adjourn then so that the hockey afficianados
19 can repair to their television sets. I understand the
20 two teams are from the United States, so I don't suppose
21 Mr. Hollingworth will be watching the game.

22 (LAUGHTER)

23 So we'll adjourn until nine
24 o'clock tomorrow.

25 (PROCEEDINGS ADJOURNED TO MAY 14, 1975)
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